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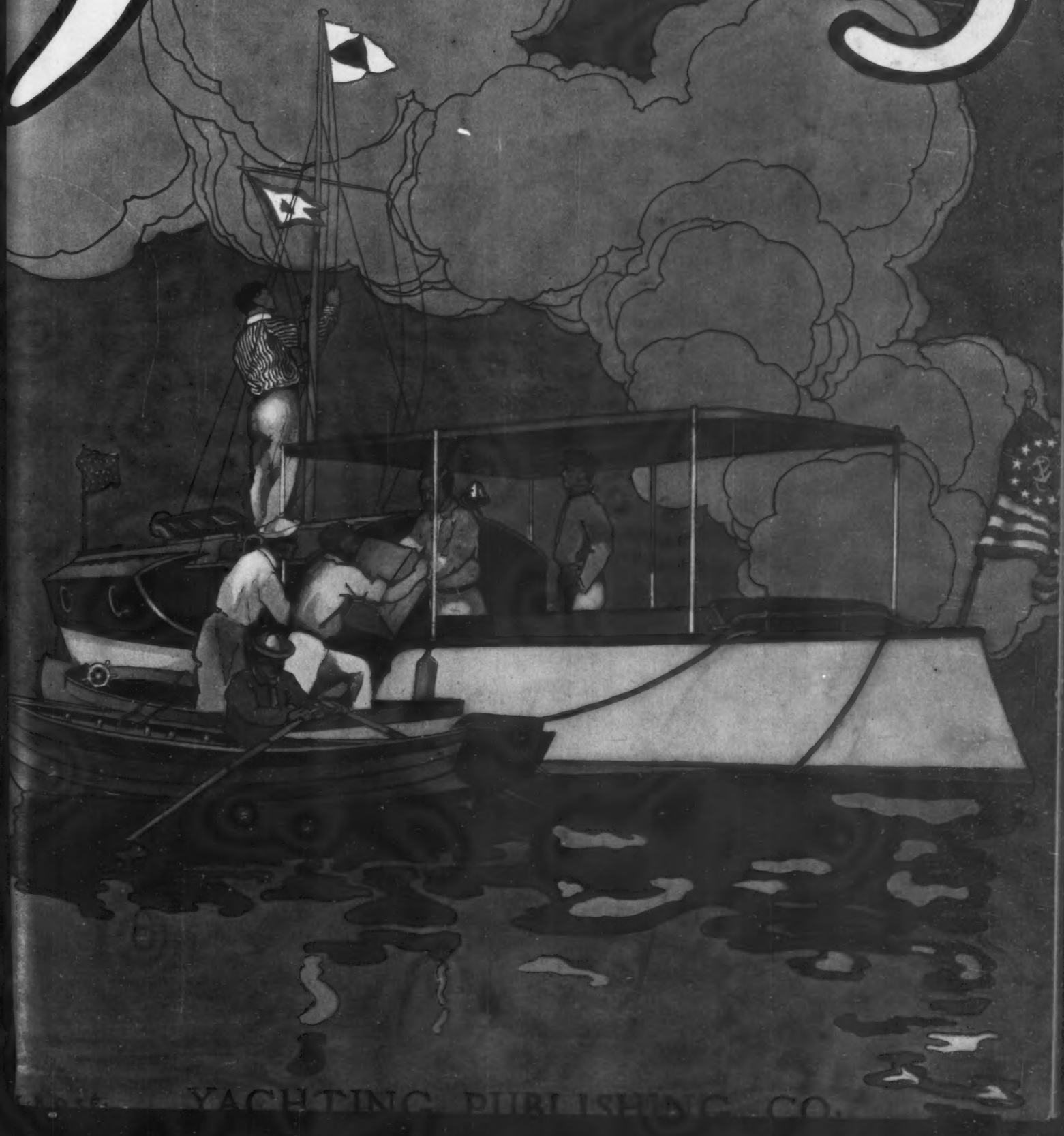

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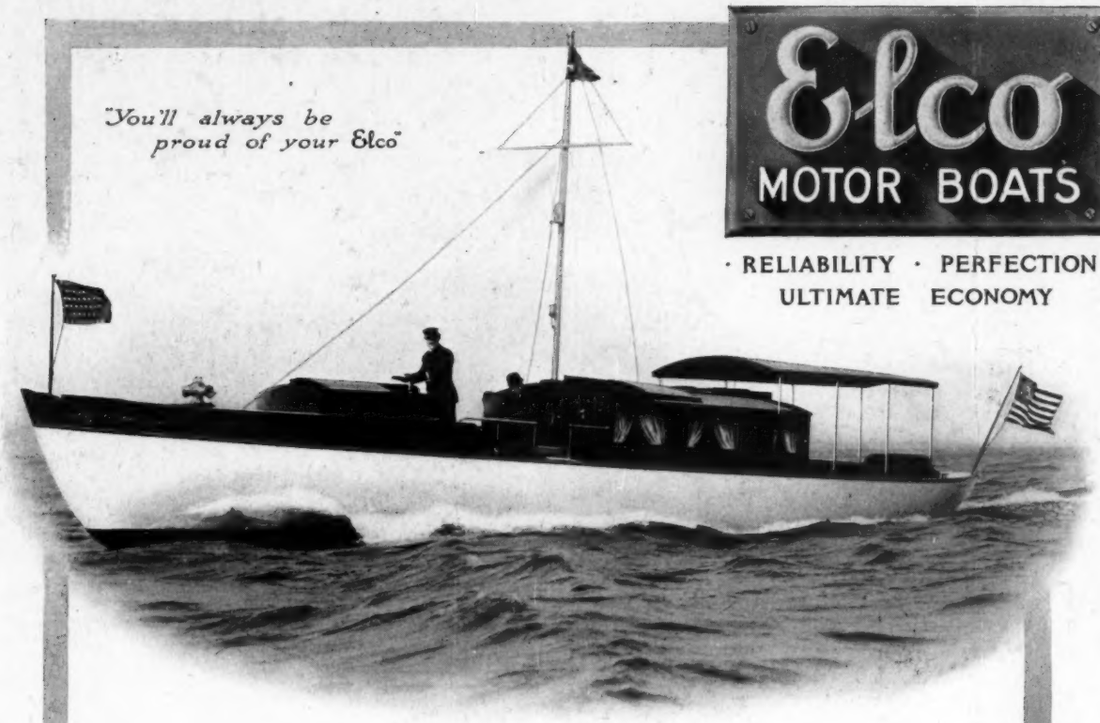

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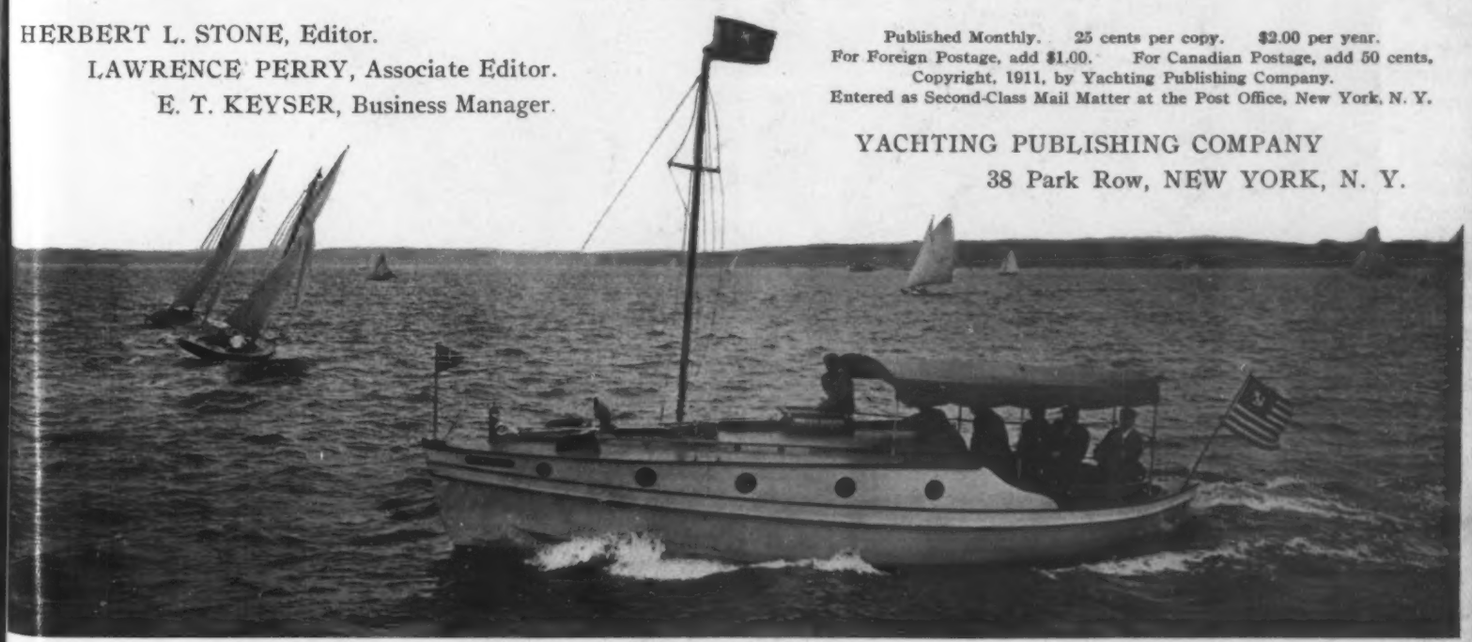


RUNNING THE EASTING DOWN.

(See page 25.)

YACHTING

VOLUME X. NUMBER 1 July, 1911 25 Cents a Copy $2.00 a Year

LOOKING AFT OVER THE ROOF GARDEN. LADY MAUD, SHOWING WIND SHIELD FOR PROTECTION. DOWN CHESAPEAKE BAY IN A MARCH NOR'WESTER

"On to Washington"

BEING A VERACIOUS ACCOUNT OF A JONAH TRIP IN A MOTOR BOAT FROM PHILADELPHIA TO THE CAPITOL CITY, UNDERTAKEN IN THE MIDDLE OF MARCH

By C. S. STREET

ON Tuesday, March 14, 1911, the Lady Maud was launched from the ways at Camden, N. J., where she had wintered, for another season's battle with the elements. She was in fine condition, and her bright work and fresh paint made her look like a new boat. But from the start it looked as if that famous cruiser was to have an eventful summer, for in blocking her up to slide her 15 tons weight on to the big iron cradle a jack gave way and the men just managed to save Big Sam, who was under her.

"Garl darn her hide! I pity 'Doc' this season; that debil will get him if he ain't careful," said that worthy, as he shook his fist and felt if any bones were broken.

It seemed as if the gods, man, and the combined elements were in league trying their best to keep that cruiser on shore and make a big flower box of her or a snug berth for a wandering tramp, as she stuck on the ways when being launched and another high tide came along before she lay at the wharf ready to receive the new owner, saying to herself possibly, "I don't want to leave here! Why did 'Doc' sell me? I'll show 'em." The chief of the yard strolled down to see if the boat was all right and shook his wise old head as he remarked to the men, "Take it from me, boys, that hooker is going to do something before she gets away from here. You know it's a sure hoodoo for a ship to jump the ways, and I wouldn't sail her to Washington with 'Doc' for her outfit."

The designer thought differently. "Why, that little 'Doc' is so used to trouble he will only laugh when you tell him, and even if all hands put the Gipsy Curse on her, and Friday was the sailing day, and it was the 13th, that man would start for Washington and keep her going until the boat sank under him. He hasn't any better sense, and thinks that ship could cross the ocean; so what's the use?"

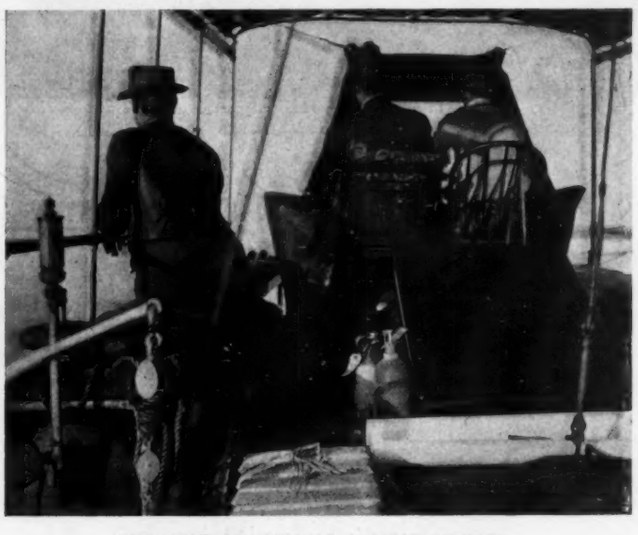
Wednesday seemed the opening of Spring; overcoats were discarded, boat talk was heard all over the city, and the crew, waiting an opportunity to take the Lady Maud to her new home at Washington, where she had been sold, felt glad that at last there was a chance to slip down the Delaware River and get South before another cold snap set in. During the afternoon a jolly party of salts sat in the cabin of the Lady Maud making plans for the cruise and admiring the job of overhauling. Mr. A. S. Pattison, her new owner, and his son Pat were delighted with the boat, but for the life of them could not understand where she got her name. Dick Young, the navigator, explained: "When 'Doc' bought her she was called Agnes, which soon became Agie. He didn't like that, so he named her Lady Maud and painted her black. Of course, nobody called her Lady Maud; they gave her Black Pirate; and some even called her Hooker. Then 'Doc' lost the L to Lady and came down to plain Maud, which you see now on the stern."

"That's all right, but it ain't all the truth. Come, let's get over to the Yachtsmen's Club. I want all hands aboard early to-morrow to stow this duffel," said the erstwhile owner; and the bunch made for the club quarters.

On leaving the club that night after an evening with the boys, they met a freeze of weather outside that took the cruising fever out of them and gave promise that by morning everything would be solid ice. Sure enough, at 8 a. m. the next day, when the navigator and captain met again at the club before crossing the river

to Camden, both yachtsmen felt the unseasonable cold through to their bones, and wanted to say, one to the other, "I'm not going on this trip while the thermometer is 14 degrees above zero." After hanging around to get their courage back, the 'phone went off: "Hello! That you, 'Doc'? For goodness' sake come over at once! The acetylene plant has blown up, and Pat and I have had a close call."

Did we hustle? Did we feel deep down in our hearts that Bill's phophecy had come true? Were Dick and I worried about Mr. Pattison and Pat and the poor ship? It took us about twenty minutes to reach them, but it seemed ten hours. We imagined everything, and were in a highly wrought state when we saw poor Pat in the yard office. I nearly let the tear bag loose. He was a mass of blisters, but through it all he smiled us a welcome. Mr. Pattison was cut and burned around the face, but not to the extent that Pat got it. We ran down the wharf to have a look at the ship, and I was the first down her dear old companionway and met a sight of wreckage hard to realize. The big acetylene generator plant was a twisted bundle of steel and copper, the pipes were bulging and torn from the bulkheads and floor covering, and the newly varnished cabin and engine room were covered with slacked carbide, and the paneling was a charred and smoky ruin. The acetylene plant was an old-style generator, in which the gas was generated in the boat by the admission of water, and the general opinion was that the trouble was caused by the opening of the seacock, letting the water raise the float and opening the valve to the carbide chamber. These valves held open too long, and a load of carbide rushed below to the water and made more gas than iron could stand without something giving way. The gas came in contact with a lighted oil stove and caused the explosion. The safety vent pipe was found to be frozen, and, had this not been so, the extra quantity of gas would have passed overboard and saved the plant. The generator had been used for cooking and lighting, and had always been found to be ideal for yacht work.



THE WIND SHIELD WAS A GREAT COMFORT.

We talked over the damage and decided to notify the insurance company and wait until they adjusted the loss. The boat was banging against the wharf and the wind howling at a 50-mile-an-hour rate, and we hustled on deck to get out fenders and more lines. The mercury was down to 12 degrees and ice forming everywhere. It was no summer boat work that morning, and we had had enough of it by the time the lines and large fenders were placed and the ship safe.

That settled Thursday as a starting day. Friday was just as cold, but the wind had let up a little. We met on board early and got a man from the yard to fill the water tank. He took several hours to fill a 40-gallon tank, and, as he kicked about the job, I looked it over and found many pounds of fresh ice forming in our bilge. The explosion had cut the lead pipe from the tank to the galley. We were getting used to trouble by this time. The boys refused to pump, so we let the ice grow to keep the butter warm and bought four demijohns for our water supply. The new boss, in his quiet, gentlemanly, Southern voice, then inquired: "Have you tried the engine yet? I have put in about two barrels of gasolene, and I hope I do not have to unload it again."

"That's a Hall engine, Boss, and she will go the first crack, although I have not touched it since last fall. My gosh! I wish that two inches of grease was off those cylinders. Here she goes, anyway!"

'Doc' was cock-sure, but he had never been shipmates with a gas engine and freezing weather before. He gripped the lump-of-ice flywheel and managed to pull it over several times. Then his hands became numb with cold, and he asked Pat to take a turn. He cussed, he begged, and even thought that engine was no good. The Boss thought he had bought a lemon. Dick gave many directions; but, being only a navigator, no attention was paid to him. Then "Doc" got wise and said: "That is the first time that engine ever refused to go." Chorus: "Liar!"

Out came the spark plugs and a few drops of gasolene were put inside. The plugs were replaced, and on the second turn of the flywheel off she went. The Boss smiled, "Doc" repeated a dinner order, Pat tried to smile, but his face refused. Along about noon we had everything ready and the damage to the boat at last adjusted. We were about to cut loose from the wharf when the engine stopped. I thought the oil was not lubricating the cold machine and took the cups apart, cleaning the winter's gum out, and started up again, giving the order, "Stand by, boys!" and they stood by for two hours while I spliced the magneto belt. Then at last we left Camden, full of wondering what would happen next, but determined to get that ship to Washington or sink her. We came near it at that, as twenty minutes' sail down the Delaware brought the next annoyance to us when someone kicked the big 3-inch plug loose and we fought like mad to stop that geyser in our cabin from filling us. Fortunately, I had driven a nail in the plug and made it fast with a bit of line, so that I could find it if such an accident did happen. Then another mess to clean up. We did fairly well to Delaware City, the run being some 40 miles. Left Camden at 5 p. m., sailed for five and one-half hours through freezing weather, and reached the locks at 10:30. Locked in, and hustled for a red-hot stove and a big stew. There we sat, four frozen mutts off the yacht, thinking we were having a good time and telling each other so to keep our courage up! Like a bunch of fools, we went back to the yacht instead of staying at the hotel, and the first night aboard was a corker! We bundled up in all our clothes, pulled knit caps over our heads and flopped into our cold bunks. Just before blowing out the light the Boss sang out, "Don't you think the fumes from the oil stove will smother us?"

"Might as well smother as freeze to death; let her burn; I'll watch it. Good-night, all!" and Dick was off for dreamland.

"On to Washington!" was the cry the first thing Sunday morning as our ship's clock struck three bells. "Doc" gave the cry, and ordered the boys out—then promptly turned over for another nap. The boys slipped on their oilers and went on deck to handle the lines and make ready for the canal run, and soon yelled down, "Start that engine; we're freezing up here! Get the coffee going!" The morning was cold and still, with heavy clouds to make it seem colder. Ice was on both sides of the canal, and the scenery, so beautiful during the summer months, was cheerless and without interest. We found, after a half-hour's sail, that the

intake pipes to the cylinders were solid with ice two-thirds of the way up, and wondered why the engine minded it so little.

The distance through the canal is 12 miles, and the speed allowed is 4 miles per hour, so we ran according to rules and reached the first lock. The men soon locked us through to the next level, and we ran to the high railroad bridge and tied up, as a tug was coming down with several barges. While waiting for the tug we downed breakfast, and the Boss tried to shoot a picture, but the shutter would not work, it was so cold. We ran to the next lock, and then the last run to Chesapeake City was made, and we were lifted some 20 feet to get our boat on Back Creek. Just as soon as we tied up to the wharf all hands streaked for the supply store and got close to the stove. We purchased some grub and filled up with gas, while I borrowed a thin slab of pine to clear the decks and "roof garden," as a heavy snow storm was howling down upon us. It seemed that this storm would completely put further progress out of the question, but the yell—this time from Dick—"On to Washington!" gave us courage, and we sailed into the snow with minds made up to run until we went aground or were lucky enough to sail down that crooked creek to the Elk River.

Although the snow cut out the shore line many times, we managed to reach the Elk River. Down came the signal "Full speed ahead." I gave her all there was and a little more, as the engine commenced to knock. Shoved the spark up a little and went on deck to have a look at the river and Turkey Point. The navigator was cross and would say nothing; he just kept working out his courses and seemed in his element.

Finally we arrived opposite Betterton, and the storm changed to hail, making the decks so slippery that we had to rig up life-lines to keep us from tumbling into the drink. That point near Batterton was the last land we saw. The hail turned to rain and fell in torrents as we sailed down the bay. Then, to keep the navigator worried and see if he really did know his business, a heavy fog came down upon us and the sea gradually became a calm, smoky body. A steamer blew her fog signal, but we never saw her; some voices to starboard and the throb of a heavy gas engine told us a power boat had passed.

SMASHING DOWN THE SEAS TO GET OVER TO THE WEST SHORE.

The course, S. S. W. ¾ W. for 21 miles, took us diagonally across the bay to Sandy Point, and I wondered what would be the navigator's landfall. Pat had the wheel, and, for a new hand at the compass, he was a wonder. After he got the hang of the lubber point he could keep the course better than many a man I have seen who had been off shore for years. That 21 miles soon passed astern, when Pat asked, "What's that, 'Doc'?"

"Nothing but a steamer, and she dead ahead. Keep your eye skinned," I answered. Many times we heard that mournful signal, and we strained our eyes to penetrate the fog and get a look at what was making it. Then of a sudden it stopped, and then commenced again. We heard it to port and to starboard. The navigator said nothing, but I happened to catch a smile of satisfaction on his old mug, so I dug down into the cabin for a look at the chart.

"Oh, you foxy navigator, so that's Sandy Point Lighthouse doing all that blowing, is it? Let me count those blasts."

Dick went below, and I feel sure he hit one to himself. Just at 5 o'clock out of the fog came the big brown lighthouse and the course was changed to pick up Black Buoy No. 33. The run to Annapolis was made in safety, although we passed warships, oyster boats and many buoys. They would loom up out of the fog all of a sudden and make the man at the wheel work lively to go clear. The navigator, with his watch in one hand and a slip of paper with the courses on in the other, stood forward like a real old salt and called out the course as the minutes told him the distance run. He kept strictly to the work he had planned ahead, and with a smile that would not come off he landed us at the Capitol Yacht Club station at 6 p. m.

Monday we were up with the sun, but he was not doing business that morning. We loaded all the gas we could carry, as this was the last place to get it until we were well up the Potomac River. "All ready, you fellows?" I asked, when the engine was running smoothly. The Boss took a long breath, gave a mournful sigh, and went below. Pat jumped for the lines, and Dick sang out, "Say, 'Doc,' it's worse than yesterday." It was. That fog bank was as thick as cheese—not the kind with holes in it, at that. "Got your courses, Dick?"

"Yes, but I don't like it. We were lucky yesterday, but I don't know what we are up against today."

"On to Washington!" I sang out.

"On to Washington!" we both yelled as the Boss came on deck again and lent a hand with the lines; and we were off.

Left Annapolis at 8:40 a. m. Picked up Greenburry Point Lighthouse and several buoys, and then started on a long run down the Chesapeake Bay in the thick fog. Occasionally the wind opened the white sea smoke, and we made bets that the fog would clear up by noon. Presently several sharp puffs of wind from the west took a hunk of that sea smoke off to leeward, and we knew it would not take long to clear up entirely. Passed the big red buoy No. 20 at 11:30 a. m., and, twenty minutes later, the fog rolled away and the sun came out to cheer us. The ship was on her course and the distance corresponded to Dick's calculations. Then the wind commenced to sing a merry tune, the ship cut loose at a good clip, and the boys huddled in the "roof garden" under the protection of the big wind shield and watched the seas get bigger and bigger. A hint from "Doc" to the navigator made him alter the course more to the west shore, and, later, we had to put her head to it and smash the seas down to get to windward. That wide, light-draft power yacht had all she could do to make headway. She seemed to go as fast sideways as she did ahead. The seas tried to pound her to pieces, the awnings flopped until they nearly tore loose, and the wind shields bellied like hugh balloons; the spray flew clean aft, but we fought it out, and managed to get under the west shore, going not over 4 miles per hour. Our course took us to Cove Point Light, which we passed at 3:40 p. m. A sight new to us all was five submarines off to port of us, with their hulls all awash and only their turrets showing. They looked like islands under way, with breakers covering them. Unfortunately, we could not get a

picture. Passed Cedar Point Light at 4:40 p. m. and Point No Point at 6:15. Night was on us, and the flash of Look Out Light told us it was only a short distance to the mouth of the famous Potomac River. The sailing lights and our masthead light were doing business, and I built supper, knowing it would give the boys better spirits for the night run. No matter what happens while cruising on the Lady Maud, I have always managed to serve the boys with hot meals, and, at the proper time, get them at it. After supper the Boss remarked: "There is a fine little river up the Potomac a short distance. Shall we anchor for the night?"

All he got was "On to Washington! We sail all night."

It was a long run up the Potomac with the tide against us. The wind got into the N. W. and came along with the tide, cold and strong. Before reaching Ragged Point Light we ran out of our course a little and picked up a fish net from a pound pole. It hit our yawl, which was on the davits, and nearly carried her off. Dick yelled: "Keep her to port!" and then explained that the law allows fishermen to build their nets out from shore until they are in a line with the lighthouses. This makes it dangerous for cruisers to run in towards shore for an anchorage at night or to get out of the channel.

The Boss sat by the engine, oil-can in hand, and by the hour he oiled things, no doubt expecting every minute to hear his new yacht go crashing into a stone wall, or to be fired bodily across the cabin when those two fools with their cry of "On to Washington!" ran the ship on a sandbar. But they didn't.

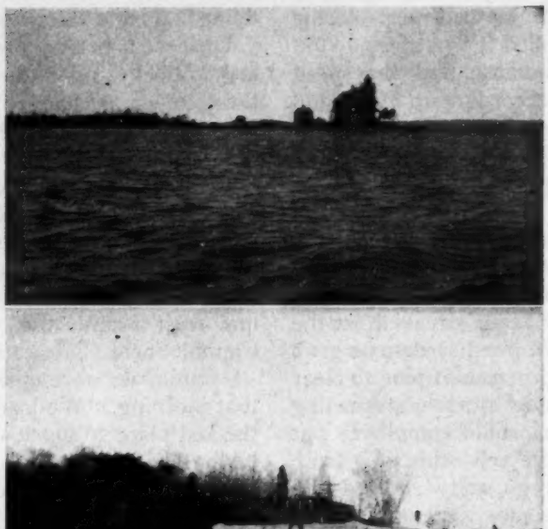
Passed Ragged point Light at 10:25 p. m. and Colton Point Light at 11:45. For 31 miles we sailed that night on absolutely strange waters, but the lighting of the Potomac is of the best, and we found Cobb's Point Light marking the mouth of Wicomico River. Here Dick was taken with a severe case of neuralgia and called "enough." I slowed down as we passed up the river and called Pat below to get his orders for anchoring the ship. "Get out about 60 feet of chain; lay it along the deck and make the other end fast around the windlass. You can't hold this boat with your hands. When the chain gets to running, stand clear. See that your hook goes over without fouling. Have you got it, Pat?"

"Sure, I have."

Then I got the signal to stop the engine. The boat lost headway, and I heard the chain going out at a fine rate. I realized that more than a hundred feet had gone over and rushed forward just in time to see the last link, with a vicious snap, bid us farewell. Pat had followed orders to the letter, forgetting only the most important item—to make the other end fast. A song went up from those mad sailors that must have made the cows ashore think it was milking time. Poor Pat dug for his bunk and went to sleep. We managed to get another hook over, the riding light up, and I got up a bite to eat before turning in. I blamed myself for the lost ground tackle, as I forgot to make it fast below before starting. Our log showed us we had anchored at 12:40.

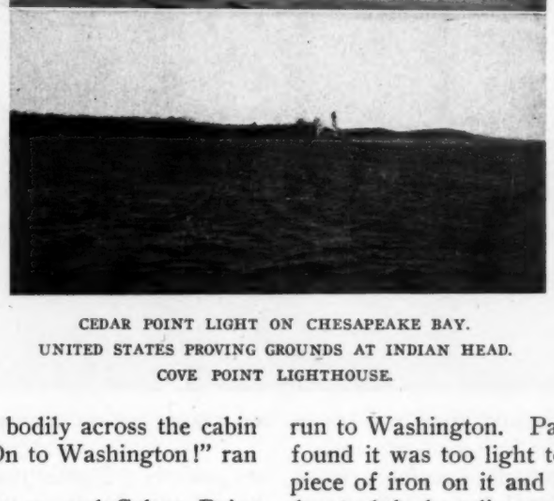
Tuesday morning, daylight again, and preparations made for the long run to Washington. Pat and I rigged up the grappling iron and found it was too light to stay on the bottom, so I fixed a heavy piece of iron on it and then tried to catch that lost chain. We dragged the long line and grapnel for an hour, but no chain. Dick

(Continued on page 74.)

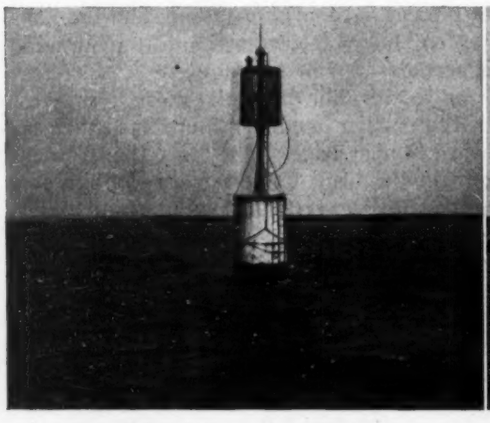


CEDAR POINT LIGHT ON CHESAPEAKE BAY.

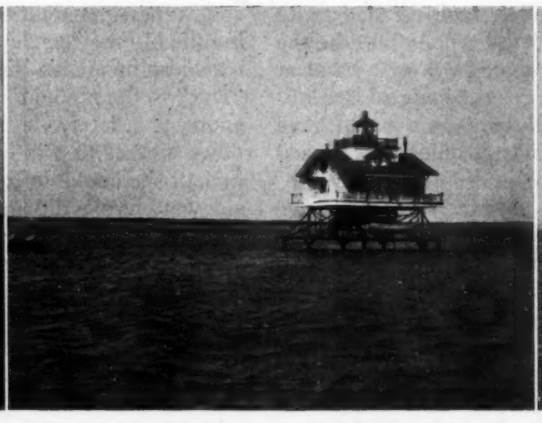
UNITED STATES PROVING GROUNDS AT INDIAN HEAD.



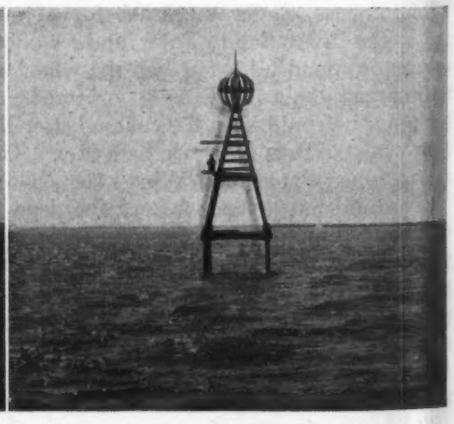
COVE POINT LIGHTHOUSE.



LOWER CEDAR POINT BEACON.



LOWER CEDAR POINT LIGHTHOUSE.



PERSIMMON POINT SHOAL BEACON.

MAPLE LEAF III, ONE OF THE ENGLISH CHALLENGERS, DOING 47½ KNOTS (57 MILES) AN HOUR. SHE IS A THORNYCROFT HYDROPLANE.

England's Prospects for the B. I. Trophy

DETAILS OF PROBABLE CHALLENGERS FOR THE NEXT GREAT RACE

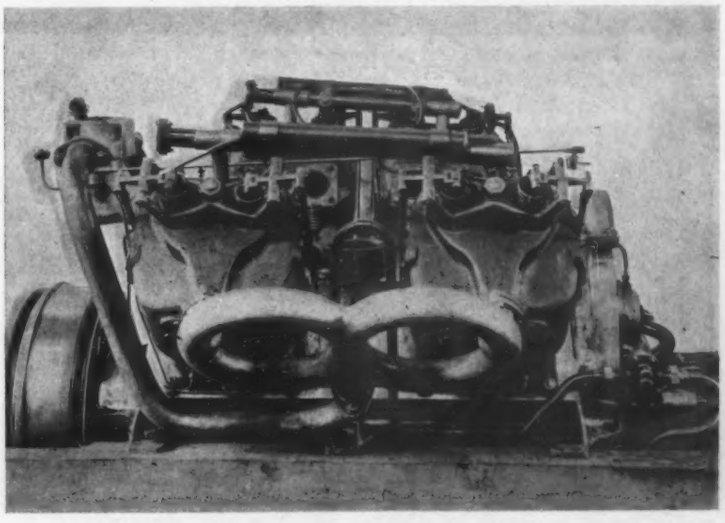
By J. RENDELL WILSON

IF I were asked point blank what I honestly thought of England's chances of winning the coveted "Blue Ribband of the Water" next August, I should reply: Not much! Last year I placed an over-confidence in Pioneer; but, as proved to be the case, accidents will happen even with the finest of craft. Up to the moment of writing only two boats have been built this year, or are now building, in England, with the British International Trophy as the main object in view. These two boats are Mr. E. Mackay Edgar's Thornycroft hydroplane Maple Leaf III and the new Cox & King 40-footer for Mr. F. Gordon Pratt, which I am describing during the course of this article. Two notable boats built last year may compete—namely, the Fauber type hydroplane Pioneer and the famous 36-knot Thornycroft skimmer Miranda IV. Whether the latter will be sent or not by her new owner, Lieut. Noel Sampson, I can get no authentic information. Nor is it known whether Mr. Dan Hanbury will again enter Miranda IV's sister-boat Zigorella. Another possible competitor is Mr. Fred May's new boat, which is being fitted with Green aeroplane motors, the chief characteristics of the whole design being to keep down weight to an absolute minimum.

Again, Mr. Montague Batting is building a hydroplane under Thornycroft license, from which great speeds are expected; but she is under 30 feet in length. She will have a Metallurgic engine installed.

Mr. Noel Robins, who has piloted the Duke of Westminster's famous racers to so many victories, tells me that the Duke will not build a new hydroplane, and, as yet, is undecided about challenging. Should he do so, he will have Pioneer refitted. Now, the Duke is a sportsman of the first class, and, personally, I believe that he will race the boat that made things hum at Larchmont last August. So, if everything goes well with Pioneer, we can look forward to her setting a 40-knot pace throughout the race; but there's many a slip 'twixt the starting line and the winning gun!

Regarding Maple Leaf III, there can be no doubt whatever that she attained the wonderful speed of nearly 50 knots on her trials, but this was only for a half-mile clip. At Monaco last Easter she showed what she actually could do over a lengthy course—somewhere under 30 knots, if I recollect rightly—and then she nearly went to Davy Jones' locker. However, Mr. Mackay Edgar informs me that she is being considerably strengthened. As a matter of fact, she is having stronger propeller brackets fitted, and a new underbody is being built by Saunders, of Cowes, on his patent sewn system, which was used in the construction of Ursula and Pioneer. This, without a doubt, is the finest method of motor-boat building yet invented. It consists of three thin layers of selected timber, separated by silk or thin canvas, and the whole sewn together and to the frames by copper wire, which forms a complete interwoven network, giving great strength with elasticity, while riveting and rivets are entirely dispensed with.



THE EIGHT-CYLINDER V-TYPE 120-HORSEPOWER THORNYCROFT ENGINE OF MIRANDA IV.

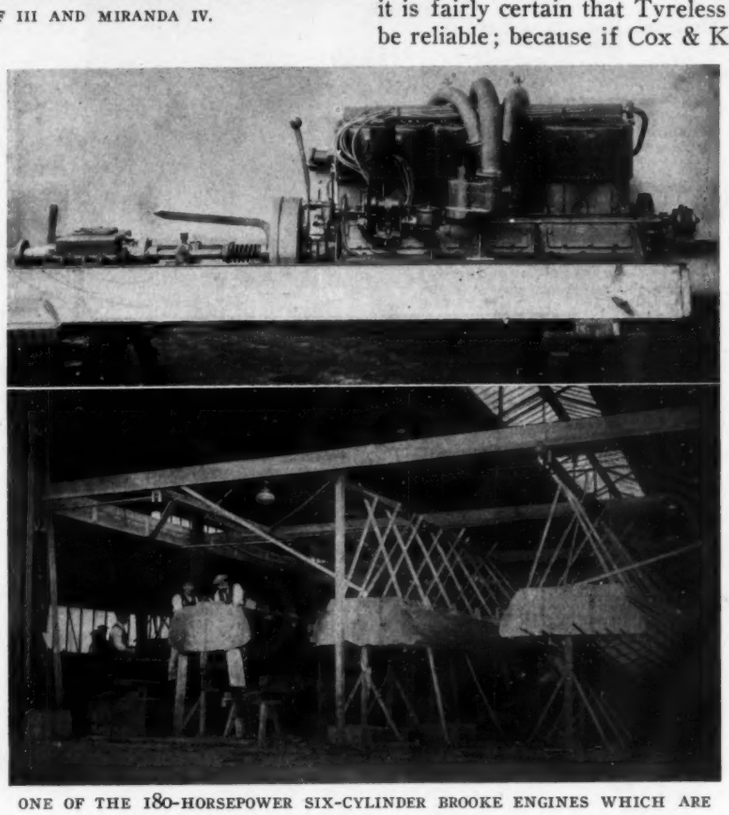
The Thornycroft design of

SIR JOHN THORNYCROFT, THE WORLD'S GREATEST HYDROPLANE INVENTOR. DESIGNER OF MAPLE LEAF III AND MIRANDA IV.

hull is excellent; but to give me a sense of confidence in her for the series of races over a 30-mile course, as will be the case next August, Maple Leaf III must first have a new pair of engines. From results up to date, including last year (for one of her motors was taken from Maple Leaf II), I don't think they will stand the strain. Twenty-four cylinders take a lot of looking after when the crankshafts are turning at 1,000 R. P. M. and developing nearly 800 H. P. Should she prove reliable, I shall always be a believer in luck. However, time will tell, and if she proves to be worthy of Dixie's fame I will be the first to acknowledge my mistaken (?) criticism. There is no need to describe her fully here, as that was done in my Monaco report in the May issue of YACHTING.

Should none of the American or English boats be able to maintain the great speeds expected, then the 40-footer building for Mr. F. Gordon Pratt stands an excellent chance of winning back the trophy from Great Britain, and, if Pioneer and Maple Leaf fail, all my hopes and faith will be placed in her. Not a hydroplane intended for record-breaking speeds, but merely a very fast cruising displacement launch, designed to steadily plod along at between 30 and 35 knots. Last year Dixie III was virtually the slowest boat of the whole bunch at Larchmont; but, like the proverbial tortoise, she won through sheer steady plodding, and I should not be surprised if this were the case with Mr. Pratt's boat. But why should she be likely to be reliable? you may ask. Wait, and I will give my reason.

Mr. Pratt's new racer has been designed by Cox & King, of London, and is being built by J. W. Brooke & Co., of Lowestoft, who, last year, put their heads together and turned out three 35-footers of identical design—viz., Tyreless II, Baby V and Ixia. Now, these were purely displacement boats, intended for fast pleasure cruising, yet with only 100 H. P. a speed of over 26 knots was reached. Baby V's speed in the Sea Mile Record Contest on a mean of six runs with and against the tide, after three-quarters of a strenuous racing season, was 25.13 knots. All three boats ran through many races during the season in all kinds of weather without a breakdown, always maintaining their designed speed of 25 knots, or a little over. Now, the new B. I. Trophy boat will also be a displacement boat, so that the discovered and as yet undiscovered troubles of the hydroplane will be eliminated, and it is fairly certain that Tyreless III—as she will be named—will be reliable; because if Cox & King and Brooke can turn out excellent craft like Tyreless II and Baby V, a boat 5 ft. longer will not worry them much.



ONE OF THE 180-HORSEPOWER SIX-CYLINDER BROOKE ENGINES WHICH ARE BEING FITTED IN MR. F. GORDON PRATT'S B. I. TROPHY CHALLENGER TYRELESS III.

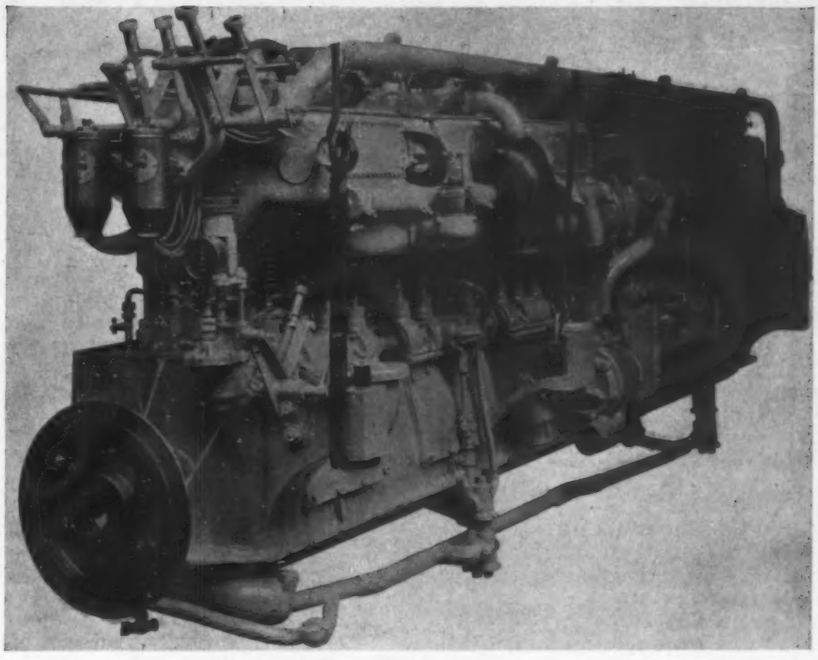
MR. F. GORDON PRATT'S NEW B. I. TROPHY CHALLENGER TYRELESS III UNDER CONSTRUCTION (X).

CORDON ROUGE, PROTOTYPE OF TYRELESS III. A 21-FOOT EXPERIMENTAL DISPLACEMENT BOAT THAT RUNS LIKE A HYDROPLANE.

I will now turn to details of the boat herself, which has a rather unique hull design and installation arrangement. She will be built of single-skin mahogany, varying from 3/8-inch to 1/2-inch in thickness, laid on closely packed timbers. Stiffening is provided by means of struts from the tops of the bearers to the gunwales. With crew and petrol aboard, the weight will be in the neighborhood of 4 tons. Her lines, which, for obvious reasons, cannot be published, show her to have a straight stem and a moderately wide transom stern. But her underbody is a new departure for a boat of her size and speed, and, running from stem to stern, is slightly convex, while her sections are of a modified sharpie design, the rounded V-sections or hard chine commencing forward and disappearing aft. The idea is, of course, to reduce displacement and the change in trim from which most boats of the type suffer when running without resort to the hydroplane principle of supporting the whole weight of the boat on one or more small surfaces, and thus to increase speed over ordinary displacement craft, without sacrificing seaworthiness or conditions suitable to the reliable working of the machinery. There is, of course, little or none of the re-

duction of wetted surface when running, on which hydroplanes and skimmers chiefly rely. Above water she resembles her predecessors of the same name.

Her installation is decidedly unique for a speed boat. She will be fitted with two 6-cylinder Brooke motors, 6½ inches bore by 8 inches stroke, each developing about 180 H. P. on the brake, but nominally of 120 H. P. They will drive twin screws, but to save beam the engines *will not* be laid side by side. Both the engines and propeller shafts will be on the center line of the boat and the propeller shaft of the forward engine will pass below the after engine. A curious point to notice is that this arrangement in *profile* resembles the placing of the two propellers in *plan* on each side of the liners Lusitania and Mauretania. To obtain the best results the engines turn in opposite directions. The forward engine is coupled to its propeller shaft by a clutch only, while the after engine is fitted, in addition, with a reverse gear. Either engine may be first started and the other pulled up by the drag of the propeller. Both propellers will be forward of the brackets.



PIONEER'S TWELVE-CYLINDER 350-HORSEPOWER WOLSELEY ENGINE.

These two firms have already built and experimented this year with two boats of this type of hull, each 21 feet long and fitted with 20-horsepower Brooke engines, the best speed attained being about 18 knots, so that, with 360 horsepower, Tyreless III should be able to easily average a speed well in excess of 30 knots; but her designers do not care to commit themselves on this point as yet. The 21-foot boats proved also to be remarkably clean running, and the absence of wash can be plainly seen in the illustration.

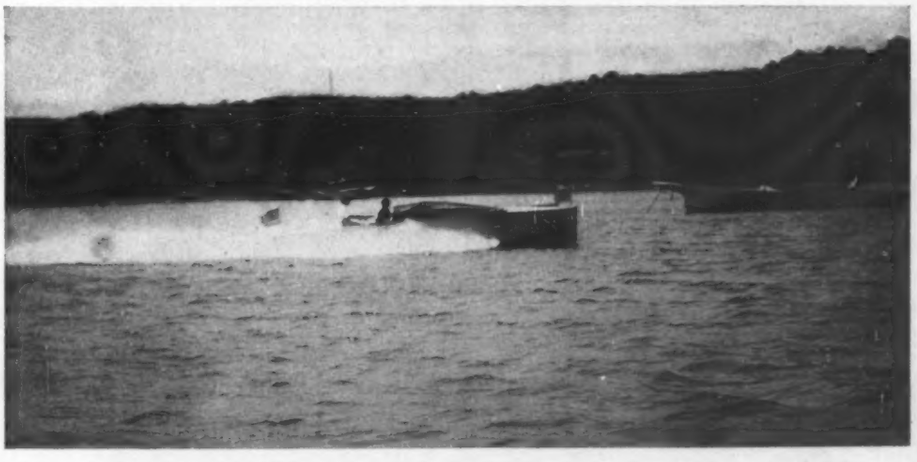
But whatever speed Tyreless III does attain, she can be relied upon to maintain it through many 30-mile contests; so, given rough water, or failure of the out-and-out hydroplanes, she should win back the trophy for the dear old flag she will race under.

The race this year will be a great uncertainty, and every boat will be a 6 to 1 chance. Time only will prove my predictions to be right or wrong.

The American Defenders

OUT of the mass of rumors and gossip that have been floating around ever since the challenge for the British International Trophy was received last winter some definite news may now be sifted, and by the time this is in print a number of the possible defenders will be having their try-outs and getting their engines tuned up. At least nine boats have been built with the possible defense of the cup in view, and while it is not sure that all of these boats will be ready for the elimination races on Huntington Harbor some ten days before the international contest, it is probable that the majority of them will be there, with the possible addition of some "dark horses."

One of the new boats on which America will pin great faith is a new Dixie, to be named Dixie IV, in honor of the boat that has been so prominent in making American motor boat history. This boat is being built by a syndicate, composed of Commodore H. H. Melville, Vice-Commodore F. K. Burnham and August Hecksher. The boat is being built from designs by Clinton H. Crane, who has tested the model out in the Government experimental tank at Washington. She will be driven by two motors with an aggregate of between 400 and 500 horsepower, one of the motors being the one that was used in old Dixie, with another one designed exactly like it. If the new engine proves as reliable as the old one, it would seem that Dixie IV is practically assured of staying in the contest to the end.



NAMELESS II, A 26-FOOT, 200-HORSEPOWER HYDROPLANE FOR CUP DEFENCE.

Rear-Commodore J. Stewart Blackton, of the Motor Boat Club of America, is having two boats built with a view of entering the elimination trials. One of these is a Fauber hydroplane, being built by the Electric Launch Company, of Bayonne, N. J., and will be driven by two Pierce-Budd motors, developing 250 horsepower

(Continued on p. 74.)

The PIRATE'S LEGACY

By Frederic Hentz Adams
Decorations by J. M. Rosé.

The Pirate stood with waiting air,
(The bay was blue and the sun shone fair)
The chaplain droned along his prayer,
The sheriff and his men were there,
The drop was creaking for its fall,
And the gallows platform held them all.

The chaplain sighed and said, "Amen",
And the Pirate squared his breast again;
His smile came meaningful and slow
And he spake these words to the crowd below:
"I am a man who has loved to roam
Where freighted galleons be;
A man who like his ocean home,
Was blithe and wild-and free,
Who swore to die on his own white deck
Yet once too often risked his neck.
Good sirs, you've won the game!
And I, who like a gallant ruse,
Can laugh with you and bravely lose,-
To grudge it were a shame.
Now grant me a like courtesy
And harken to me patiently.
"I fear not death, yet am loathe to go,
From a merry world like this,
Where a salty breath I can never know

Or a sunbeam's bronzing kiss,
And I fain would feel as I choke away,
While your trusty rope holds taut,
In the minds of you to your dying day
I shall not be forgot:
For though I was your enemy,
Ye are the people of the sea,
And that you shall remember me
I leave a goodly legacy-
A legacy of worth untold,
Of silver bars and plate of gold,
Of gems and jewels manifold,
Priceless and old!
Aye, many a strange and splendid thing,
Tales of tense love and suffering,
Spoil of the hated and adored,
Hath found a place in the Rover's hoard:
Pendants that erst had warmly lain
Soft on some burning breast in Spain,

Chill by the cruder fineries
That once did gladden Northern eyes.
Bracelets, plain and filigree,
Red coral out of the deep blue sea,
And a ring of wondrous artistry
That hath belonged, I heard one say,
To Gabrielle D'Estrées
And other rings, aye, score on score;
Some frail, that frailer fingers wore,
And some, from the hands of the unafraid,
That flashed with the owner's flashing blade
Watches, too, that mutely tell
When the fight was lost and the wearer fell.

And I mind me of a crucifix
(The lips were pale that kissed it last-
A pious, wealthy, Catholic's)
Of value vast.
It lieth now with the altar-plate,
Silver bars, and pieces-of-eight,
Necklaces, watches, rings, gems, and gold,
In an iron chest to have and to hold:
And the place is dark, and wet, and cold.
And yet, withal, the place is near,
'Tis but twice a seaman's league from here,
And over it hangs the blue of the sky,
And the seagulls wheel with their clanging cry,

And the rolling ships go by.
This is the one and only key
I leave for the door of mystery
That keepeth well my legacy,
And mystery and a golden lure
Should make the Rover's fame secure;
Yet the fame he craves is but to be
Remembered as one who loved the sea,
The sun, the wind, and the things that are free."

FRANK D. GHEEN'S KITSIX IN THE COLUMBIA Y. C. REGATTA.

The Month in Yachting

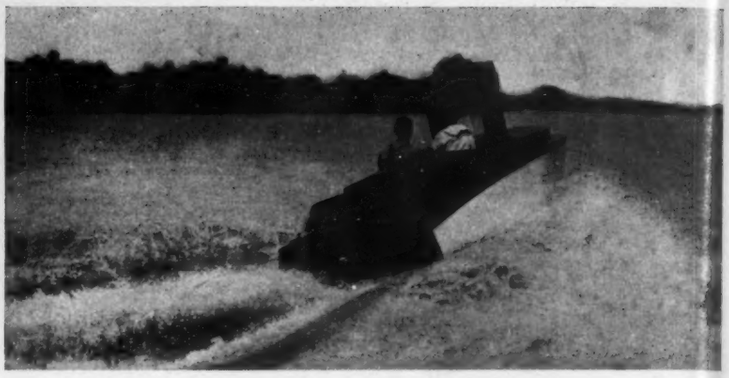
WITH Commodore H. H. Melville's recent trip to Europe and the settlement of the much mooted exhaust muffler question, together with the launching of American candidates for the elimination trials, the preliminaries for the International Cup race on Huntington Bay in August are now in full swing. As regards the silencing of the engines, I do not suppose that any person—certainly no nervous person—will quarrel with the final decision, which, as everyone knows, made for the complete muffling of the engines of the racers. In one way the innovation will strike the American ear as rather interesting, since the chief impression of high-powered motor boat racing in this country has been a deafening series of detonations, more suggestive of a marine battle than a peaceful nautical sporting event. Dixie II, in the course of her triumphant career, has shattered more eardrums than she has records, which is saying a great deal.

It is quite certain that builders of American boats will take no chance of disqualification with noisy exhausts, and so all we should hear will be the swift cutting of the water as the racers speed on their way—maybe. From abroad come a countless number of rumors, one of the most interesting being that the Duke of Westminster is going to send over an unknown as one of the three challengers. The Duke's "flyer," it is said, will be a hydroplane of the multiple step type, a shade under 40 feet in over-all length.

The other British challenger is Maple Leaf II, which tore up the water at the bewildering speed of 57 miles an hour in her speed run on the Solent some time ago. Still another challenger will come, it is reported, through the British Motor Boat Club. All will be good, undoubtedly. Of the American boats, six will surely be good, although how good time alone will tell. Dixie IV, however, may be relied upon to hold up American prestige. Clinton H. Crane, her designer, is a very conservative and very scientific man. His experiments with the Dixie's model in the tank at Washington were exhaustive. Now I get it—and on good authority—that Mr. Crane has made the statement that Dixie will do at least 50 miles an hour, day in and day out. If she is able to do this Maple Leaf and the Duke of Westminster's reported hydroplane will have the race cut out for them from the start. Mr. Crane, it may be remarked, is not the man to make rash statements.

THE NEW GARDNER S BOAT FOR A RUSSIAN YACHTSMAN.

Navahoe, Vigilant, Ingomar and Westward, all American yachts, have raced in English waters in the past years, and now, it would seem to us, it is distinctly up to the British to reciprocate. British craft have not been noted for their appearance in American waters, save at times of races for the America's Cup. At this writing, the New York Yacht Club appears to have awakened sufficiently to have set about some negotiations looking toward the bringing to this country of G. Cecil Whitaker's Fife-designed schooner Waterwitch. If she should come, the schooner racing would be the finest, probably, that the world ever saw; for in Waterwitch's class would



THE 26-FOOT V-BOTTOMED RUNABOUT FURLONG, WHICH RECENTLY ATTAINED A SPEED OF 42 MILES PER HOUR.

be the new Plant Herreshoff-designed fore-and-after Elena, the crack schooner Westward and Irolita, formerly Queen. It would do as much for American yachting as two America's Cup races, and for this reason the advent of Waterwitch would be a very fine act upon the part of our racing cousins.

"The new Herreshoff sloop Corinthian carried a weather helm in her trial trip off Bristol."—*Daily Newspaper.*

Well, even if so, it might have been worse. A boat that carries a weather helm may win races, provided the weather helm is not abnormal. The last case of "helmitis" I saw was that of Independence—Lawson's ill-fated candidate for the honor of defending the cup. Dr. "Hank" Haff treated her to the best of his ability, but with no results. But to go back to Corinthian. I am assured by C. Sherman Hoyt, who is sailing the sloop, that this is not the case, at least to any extent, and that the change of tillers which was recently made was only to get one that was less limber. On the contrary, he was most glowing in her praise. That's the best proof.

There were rumors about the New York Yacht Club recently that some American yachtsman had bid for Cecil Whitaker's Cicely, which has given way to Waterwitch and is now for sale. That does not sound likely. It would be a fine example of carrying coals to Newcastle. We have a fine lot of schooners in this country that could be bought at a fair price. So why Cicely? She was not such a much.

"Didn't you used to design sailing yachts?" asked a gentleman who recently was introduced to Henry Gielow. The initiated will, of course, recall that Mr. Gielow, among other things, created the sloop Effort, 1906 winner of the classic King's Cup. Mr. Gielow, however, merely smiled, and said that he had designed one or two in the past, and, in fact, was still dabbling at the game.

I saw Charles E. Mower the other day, who seemed quite contented with his new abode in Philadelphia. He found New York dreadfully noisy, he said. He is filling the Delaware River and other bodies of water with swift motor boats and swift windjammers.

Down on the south shore of Long Island there are a bunch of the liveliest yacht clubs that any yachting enthusiast would care to see. Such organizations as the Nassau, at Wreck Lead; the South Shore, at Baldwin; the Hempstead Bay, at Freeport; the Keystone, at Woodmere; the Unqua-Corinthian, at Amityville; the Long Beach, at Long Beach; the South Side, at Babylon; the South Bay, at Patchogue; the Bayshore Motor Boat Club, at Bayshore, and the Cedarhurst Club, at Cedarhurst, have done extraordinary work for the game of yachting in that section of Long Island. Their regattas do not get much space in the daily newspapers, but this summer, thanks to the progress of the past year and the acquisition of swift boats, a change will be noted in this regard.

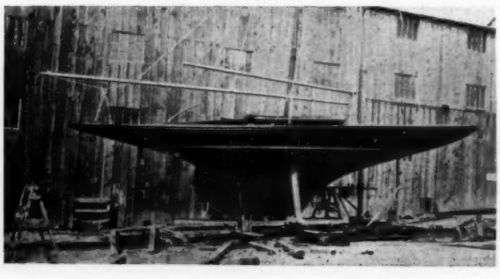
Several of these clubs have formed the Hempstead Bay Yachting Association, which will be heard from in the course of the season. The object of the association is to promote good-fellowship among the various clubs, to handle all events, to assign racing dates, organize cruises, and, in general, to put the sport of yachting on a strong, business-like basis. Clubs which will probably become members are the Nassau, Long Beach, Keystone, Hempstead Bay, and other organizations in the immediate vicinity.

The first crop of this season's fast speed boat are already in the water, and, if reports can be relied on, the various bodies of water in the United States will be sizzling before many weeks are past. On the peaceful Potomac, where the Father of His Country formerly lived, they have turned out a 26-footer which actually made the rate of 42 miles over a measured course. This is the Furlong, built by the Emerson Engine Company, of Alexandria, Va., for Mr. W. H. Harris, of Orange, N. J. This is a V-bottom runabout built for service, as is proved by the fact that the hull itself weighs 1,200 pounds, and the boat has a seating capacity of four. She is 26 feet long by 5 feet beam, and has two 6-cylinder engines of 100 horsepower each. On the afternoon in which she was sent over the measured course she ran from Alexandria to Mt. Vernon and back, a distance of 40 miles, in one hour—some speed? yes. From now on I shall expect to hear of all sorts of speed under 60 miles from every quarter of the country.

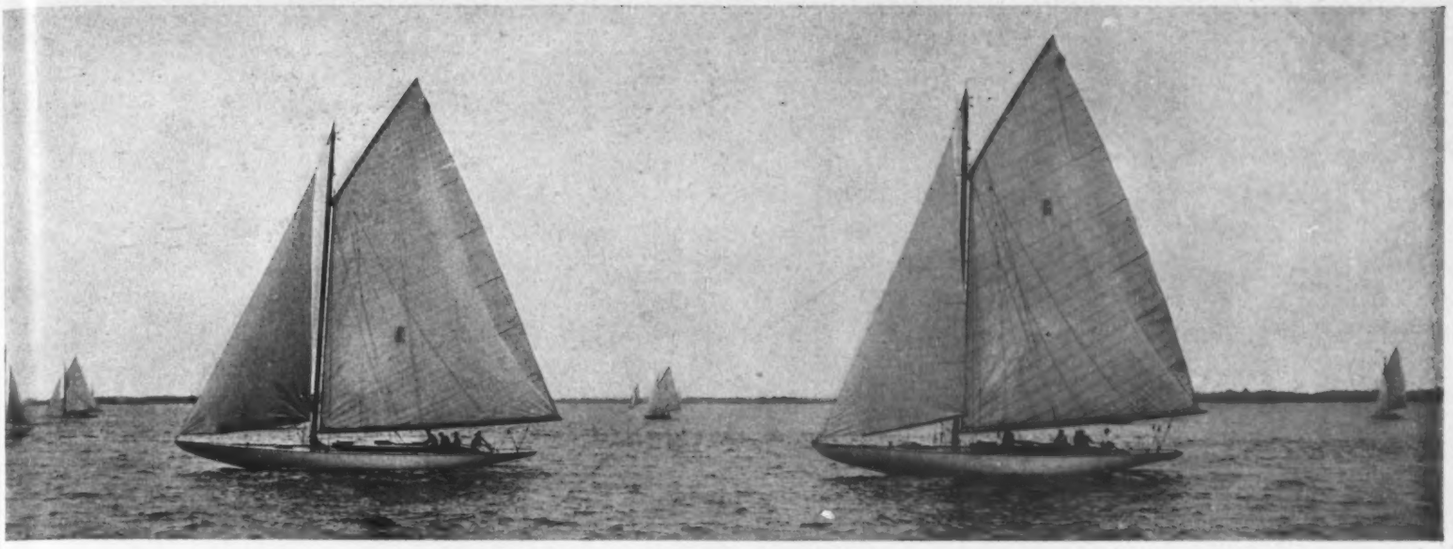
The motor boat racing season in these waters was formally opened on June 10 by the Columbia Yacht Club regatta on the Hudson, which brought a lot of new boats out for the first time. Among these were the Peter Pan IV, Tiny Tad, and Frank Gheen's new Whitaker-design Kitsix. The latter is a fine-looking, fast cruiser, 32 feet long, with speed in every line of her.

At this writing the two new Herreshoff Class P boats for the Manhasset Bay Challenge Cup series, Corinthian and Joyant, have met several times, with the honors about even, each having won two races. Joyant, owned by Commodore W. H. Childs, of the Indian Harbor Yacht Club, won on June 10, beating Corinthian 13 seconds and Windward, which won the cup two years ago, by 7 minutes 13 seconds. The series for the Manhasset Bay Challenge Cup will be worth going many miles to see this year.

In the Harlem Yacht Club regatta, on Memorial Day, interest was added by the appearance of the new Class S boat Vodka, designed by William Gardner for a St. Petersburg, Russia, yachtsman. She showed great speed, beating the Manhasset one-design class handily, and would have made a great addition to the



UNDERBODY OF NEW Q CLASS BOAT SUELEW.



NEW HERRESHOFF P BOATS CORINTHIAN AND JOYANT IN ONE OF THEIR FIRST RACES.

S class had she stayed in this country. That class needs some new craft to make it what it should be.

Interest in the Q class on Gravesend Bay is kept at a high pitch by the addition to the fleet of new boats every year. This season is no exception, for two new craft have made their appearance, in the Suelew, designed by C. D. Mower for E. F. Luckenback, and the Alice, a new Gardner boat, for Gherardi Davis. The racing between these new boats and the three new ones of last year—Spider II, Soya II and Gray Jacket—will be most keen. The Q class is, and should be, very popular, as the size of the boats is not so large as to make big crews necessary or the handling of them too hard work for an afternoon's sport.

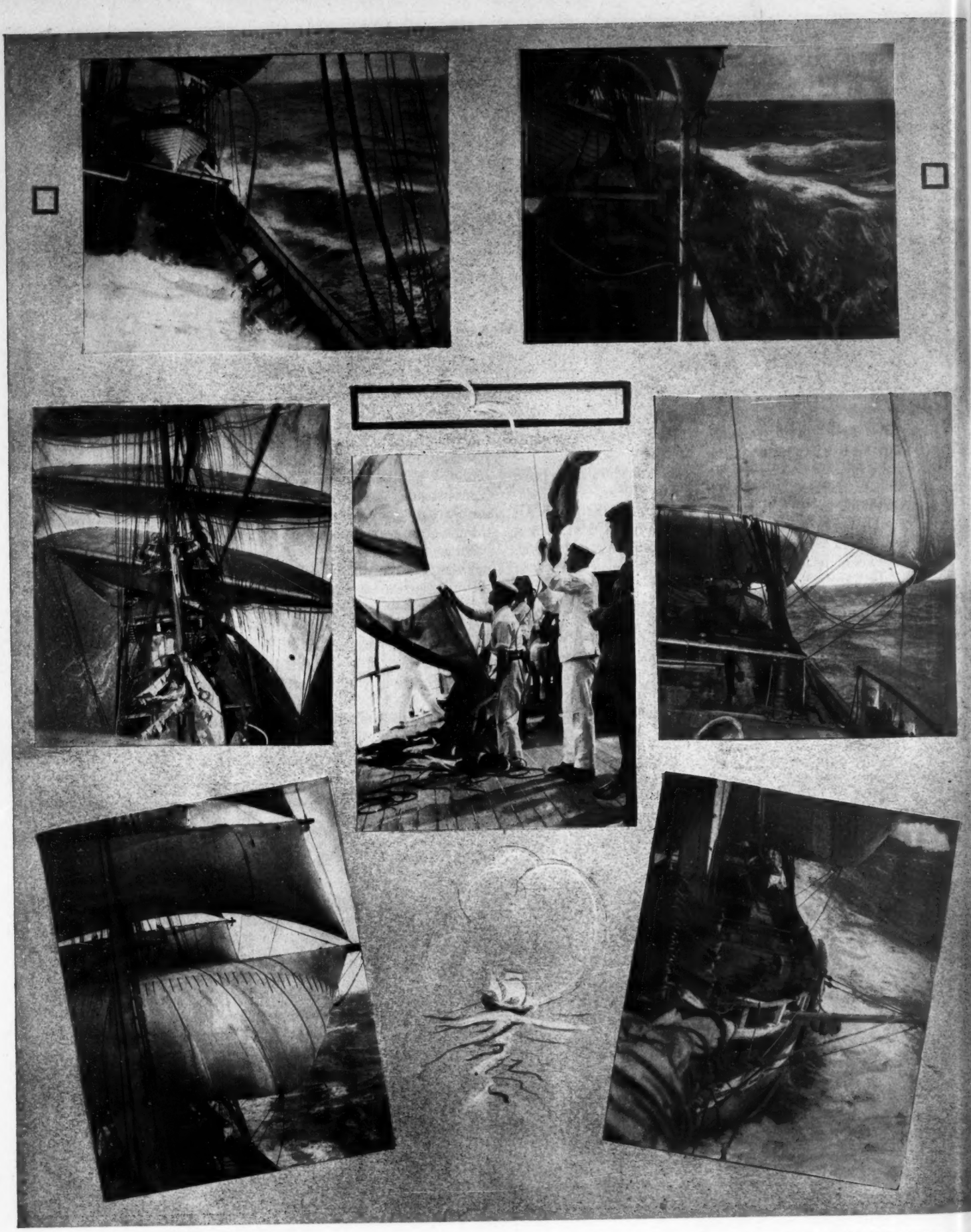
The third annual regatta of the Western Power Boat Association, which will be held at Peoria, July 25 and 26, will undoubtedly attract the attention of the entire motor boat world by reason of the quality of the entries. At no regatta in the East will such a large number of high-class boats be found, and the fact that this regatta (and that of the Mississippi Valley Power Boat Association at Dubuque, July 4 to 6) will bring together representative boats of both the East and the West should do much to demonstrate the progress that is being made along speed lines in the various parts of the country. They have a way of doing things out there that would put to the blush some of our big Eastern events, and it is safe to say that anyone who journeys to Peoria, on the Illinois River, July 25 to 26, will either see or get the best of sport, according as he is spectator or participant.

The Illinois Valley Yacht Club has provided a 10-ton crane for swinging boats in and out of the water, thus assuring safety for any boats that are transported by rail.

In the 40-foot class there will be a cash prize of $1,000 for the first and $100 for the second boat, in addition to the trophies that go with the 40-footers and under, and in all of the other classes large cash prizes are given, in addition to the silver trophies.

NEW BOWES & MOWER Q CLASS BOAT SUELEW.

NEW GARDNER Q BOAT ALICE.



PHOTOGRAPHS TAKEN ON BRITISH SHIP ILLAWARRA WHILE RUNNING HER EASTING DOWN ON A VOYAGE FROM LONDON TO ADELAIDE, AUSTRALIA.

A SEA BOARDING AMIDSHIPS.

REELING OFF THE KNOTS.

Extracts from the Log of a Windjammer

By ALFRED J. PAZOLT

DURING a recent voyage as a passenger from London to Adelaide, Australia, on the British ship Illawarra, I kept a daily log of the various incidents of the voyage, the day's runs, etc., merely as a record of a trip that is rather unusual in these days, and one which will practically be impossible in another decade, at the rate of disappearance of the old square-rigged windjammers from the seas. Believing that this may prove of interest to those who still have enough salt in their veins to love the sea, as it is seen in a deep-water voyage of some eighty-five days, I am setting down here some extracts of the log while running our easting down between the Cape of Good Hope and West Australia. The photographs that are shown here were all taken by myself, most of them during the strenuous weather south of the 40th degree S. latitude.

I have searched through my little log in vain for some thrilling adventure, wonderful sights and hairbreadth escapes, but can find nothing of that nature, so I set down the only bit of the voyage which may prove of especial interest. The first part of the voyage from London, whence we sailed on February 4, until we got well south, was all fine weather and smooth sailing. The run through the trades was glorious and the ideal of sailing—bright blue skies, with just a few fleecy trade-wind clouds, and the ship floating along through "the sun-kissed waves," her gleaming canvas swaying slowly and majestically to the warm winds. Then, as we made southing, came the gradual change to gray, lowering skies, great green-flecked rollers of the "roaring forties," and the swaying, heavy rush of running our easting down. It is this part of the voyage which will surely appeal most to those who love the sea.

April 2, 19——, 55 days out. Lat. 43.15 S. Long. 31.54 E. Course N. 7 E. Run 190.

Fine, with light breeze aft in forenoon, which freshened up to strong wind later, with heavy rain squalls. There has been a pretty big sea all day, and the ship has been fairly lively. For the last two days there have been two hands at the wheel. Have been shipping fair amount of water on main deck.

April 3, 56 days out. Lat. 42.11 S. Long. 36.30 E. Course N. 71 E. Run 222 miles.

Cloudy, but fine, moderate sea, fresh breeze all day. All sail set, except cro'jack and staysails, wind dead aft.

April 4, 57 days out. Lat. 42.11 S. Long. 42.16 E. Course E. Run 257 miles.

Cloudy and drizzly rain, blowing fresh all night. Moderated in the morning. In the afternoon freshened up again to northwest gale and big sea. Shipping a good bit of water on main deck and occasionally on the poop. Ship under topsails, foresail and main lower to'gallant only.

April 5, 58 days out. Lat. 41.32 S. Long. 46.37 E. Course N. 78 E. Run 199.

All last night it was blowing very heavy, with a big sea, and we got but little sleep. The sheep-pens on the main hatch, though lashed down with strong chains, were unshipped during the night. This morning it had moderated again and the sea gone down so that by 10 a. m. we were able to set all sail once more. The day remained fine, though cloudy, until 8:30 p. m., when the wind again increased and the royals were taken in.

April 6, 59 days out. Lat. 41.38 S. Long. 51.51 E. Course S 88 E. Run 236.

Bright and clear all day. Good breeze; close-hauled on starboard tack until 7 p. m., when wind came right aft again, and, consequently, we are now—8 p. m.—rolling pretty well again. Now that we are in the "Roaring Forties," we are making good runs, and if our luck holds we hope to arrive out in about twenty days. Lent a hand taking in sail this afternoon.

April 7, 60 days out. Lat. 41.59 S. Long. 57.5 E. Course S. 85 E. Run 234.

Fine, cloudy. Last night there was not much wind and we were rolling very heavily most of the night. Got no sleep till after midnight. This morning there was a fresh breeze, which gradually increased. At 10 a. m. we took in royals and cro'jack, and at 11:30 the to'gallants followed. By this time it was blowing hard, the wind booming and roaring through the rigging, and

we were going some. At 1:30 p. m. the mainsail and outer jib came in. At 7 p. m. wind still increasing; by 8:30 p. m. blowing heavy gale, and the upper topsails were taken in and things looking rather lively, with the wind roaring overhead and the spray flying in blinding sheets.

April 8, 61 days out. Lat. 42.34 S. Long. 62.15 E. Course S. 81 E. Run 233.

All last night it was blowing a heavy gale, and we were running under three lower topsails and foresail only. At 9:30, while standing in shelter of the tarpaulin in the mizzen weather rigging with one of the other passengers, a heavy sea struck us just abreast of the mizzen rigging, tore the weather cloth to shreds, and knocked my friend off his feet and on to me. I instinctively clutched the rail and turned my back, just in time to receive the full weight of the playful wavelet right on me, and for a minute or two I did not know quite where I was. A little later the sheep-pens on the main hatch were carried away, one of them being so badly damaged that it was sent overboard, the other one being taken forward and made secure. There was little sleep for any of us last night, as we were knocking about so much. At 4 o'clock I gave it up and went on deck until dawn. 8 p. m.—There has been a tremendous sea all day, and we have been shipping a lot of water; the wind has, however, gone down a lot, and the upper topsails are again set. Meals have been very uncomfortable, as the plates, glasses, food, etc., all seem to have been seized with a great "wanderlust," and were with greatest difficulty kept upon the table.

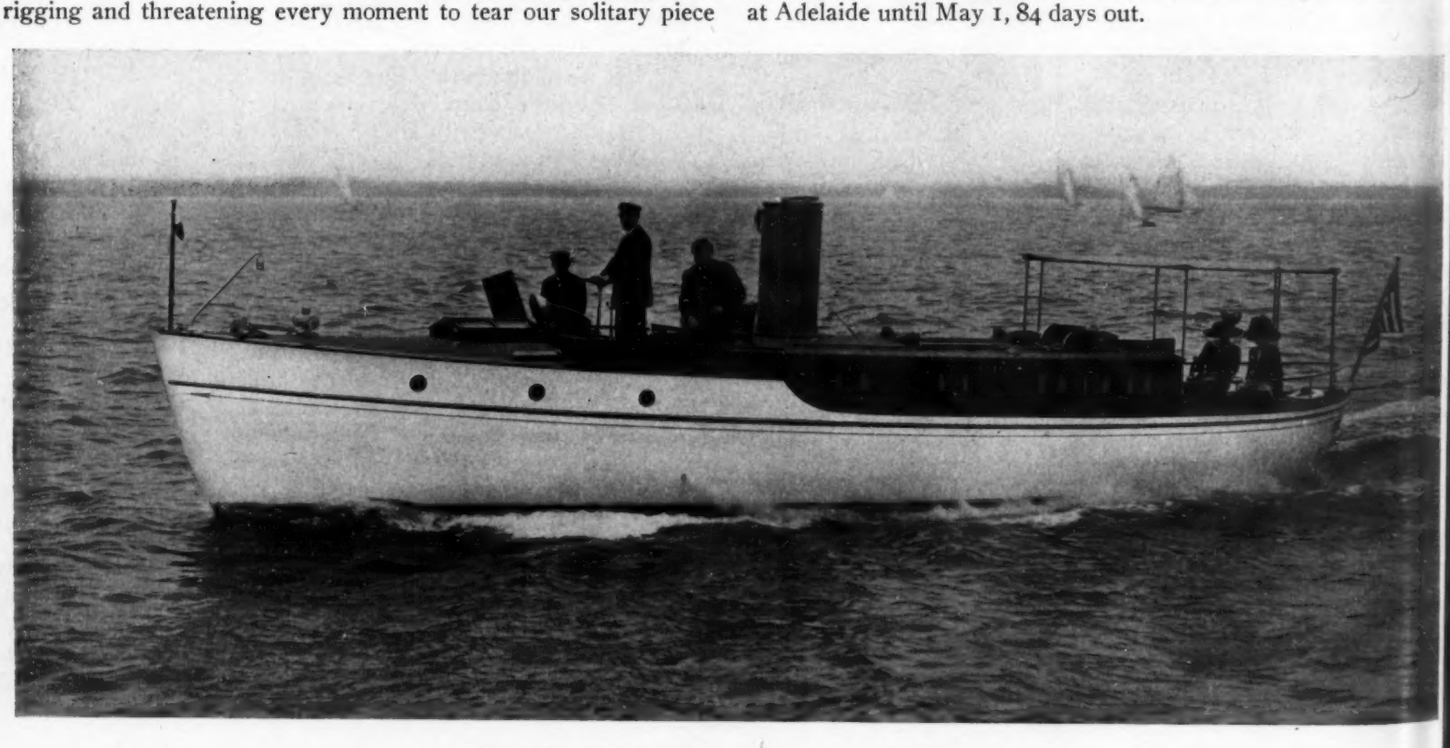
From the 9th to the 15th we had fairly fine weather, with the wind varying in force from light to strong, and we made good progress, our daily runs being 233, 206, 208, 202, 233 and 165. The 15th of April broke fine, though cloudy. About 9 a. m. it came down in nasty squalls, which increased in force and veered from S. W. to the N. W., and the glass began falling. At noon the glass was falling very quickly. By one o'clock it was blowing a gale from about N. W. We were then under fore and main lower topsails and standing jib. 1:30.—Blowing harder than ever, and by 2 o'clock it was blowing a very heavy gale, and we hove the ship to under main lower topsail only. At 4 p. m. the squalls came down on us with terrific force, roaring through the rigging and threatening every moment to tear our solitary piece of canvas to atoms, but, being a brand-new sail, it stood nobly. By this time the sea had also got up, and the tremendous green-gray seas looked like mountains as they loomed up through the thick, driving rain and came roaring down on us, occasionally breaking on board and flooding the main deck nearly to the top of the rail. At noon, April 15. Lat. 41.27 S. Long. 94.42 E. Course N. 86 E. Run 213.

April 16, 69 days out. Lat. 40.50 S. Long. 95.40 E. Course N. 67 E. Run 84.

Between 12 and 4 last night the wind reached almost hurricane force; the sea was tremendous, and often broke on board Part of the night we were running oil from port bow, amidships and aft. At times we were rolling to about 40 degrees. The heavy seas flooded the officers' cabins and considerably damaged their contents. Yesterday afternoon, upon coming on deck, my cap was whisked off my head and disappeared in the gloom to leeward, whither I myself very nearly followed it; for, just as I let go the companion door, the ship gave a tremendous lurch to leeward, and, had I not thrown myself on my back, I should have been sent flying over the low poop rail. As it was, I did a graceful slide down the deck and brought up in the lee scuppers with my feet hanging over the side. From 2 p. m. yesterday until 8 a. m. this morning we were hove-to on port tack under lower main topsail only. Shortly after 8 a. m. squared away again and ran before it under fore and main topsails, foresail and jib. Blowing a gale all day; the sky bright, but with occasional squalls, and the sea still running very high.

April 17, 70 days out.

Bright, beautiful day, quite warm, and a great treat after last two days. Everywhere are clothes, boots, socks, and every sort of article hanging out to dry. The skylights, etc., having been battened down during last two days, it was a relief indeed to get some light and air into the saloon again, as the atmosphere down there had become awful. There was still a very big sea running this morning. However, it abated during the day, and this evening is beautiful moonlight and starlight. The rest of the voyage was uneventful, the weather being mostly fine and our progress good until the 23d, when the wind dropped away and we had a succession of light airs and calms, which delayed our arrival at Adelaide until May 1, 84 days out.



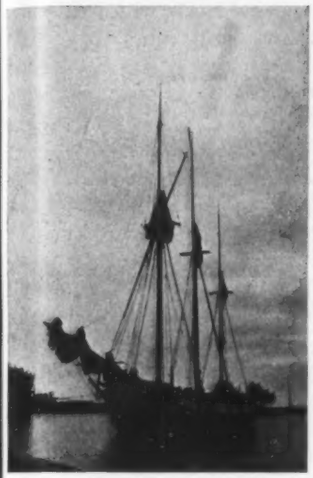
TRIUNE, THE 50-FOOT POWER CRUISER OF M. W. HOUCK.

A Short Ship on a Long Cruise

BEING A MORE OR LESS VERACIOUS ACCOUNT OF THE MAIDEN VOYAGE OF THE BLUE PETER

By C. H. J. SNIDER

PART II



ONE OF BLUE PETER'S COMPANIONS IN COBOURG HARBOR.

ONE Saturday, two weeks later, with the wind whooping it up in great style from the southwest, the Blue Peter started homeward-bound from Kingston for Toronto. That particular corner of Lake Ontario was getting it pretty badly, but a three-masted coal schooner, that had run back for shelter through the squalls of the preceding night, made sail again, with all of her kites stowed but one, so the Blue Peter tackled it under jib and mizzen. It was the first time she had had any hard weather, and that canvas seemed enough for her, especially in the puffs; but good Lord deliver the Old Man from having to sail her that way again! The seas were short and high, but she rode dry as an Atlantic liner, thanks to her big freeboard forward, although she was dipping her bowsprit and mizzen boomkin into the wave tops when she dived; and, thanks to the same freeboard, it was an all-day job to turn her around when she went in stays. It took three or four tries every time, and as the violent motion gave the gallant Midshipmite a pretty hard siege, and the sheets were about all a man could handle, the Old Man hesitated about putting on more sail. Back and forth across the three-mile stretch between Kingston and Garden Island the Blue Peter beat, making to windward, but, oh, so slowly! The three-master came scudding back under lower sails, rounded up off Four-Mile Point, on the Wolfe Island shore, where there is good holding, and anchored and stowed all her sails. A schooner-rigged scow staggered down from the entrance to the Bay of Quinte past the Three Brothers, her squat foresail slatting wildly in the partial lee of the mainsail. She was followed by another trading scow—this one a sloop, with her lifts gone and her mainsail, broad off to the rigging and lowered down to the fourth reef band, all trailing overboard and carrying tons of water. She was driving blindly before it until she could haul into the lee of the lower part of Kingston harbor.

The Blue Peter might have turned tail and run back, but that looked like a bad start, the Midshipmite said, grittily, and the sheltered water of the Bay of Quinte was getting nearer at every plunge; so back and forth that barque thrashed for seven solid hours. At the end of that time she had not cleared much more than 5 miles! The Old Man decided it was a case of desperate remedies, and the Midshipmite, though in the misery of mal-de-mer, took the wheel and steered a good trick while he close-reefed the mainsail and set it. Presto! Next "Hard-a-lee!" she answered promptly, and filled away like a power boat. The extra sail rolled her down pretty far in the puffs, but she smelt up to windward every minute and began to make the trees on Amherst Island look less like sticks in the water.

Passing to leeward of Salmon Island the sun was sinking, and the wind whooped it up harder than ever. She settled till the water came up over the lee cockpit coamings; then in the next puff she went down till the water came up on the high fore deck. Putting the Midshipmite on the fall of the jib sheet, with orders to "Let go all" when told, the Old Man got all the turns off the main sheet but one. It took all his strength to hold it with both hands, while his feet were braced clear across the cockpit. To windward of him, her eye-glasses held in her teeth, the Midshipmite nobly clung to the jib sheet, and in the heaviest of the puffs everything had to be let go by the run. The wheel took care of itself. The Blue Peter covered herself and designer with glory by steering straight as a die without a touch on the spokes during most of the squall; in the heaviest puffs she griped to windward obediently, which was just what was wanted. She could have been shortened down, of course; but after an all-day's wrestle with her under just the two pieces in a high wind her crew were loath to go back to that rig.

But they had to make the change, and that in short order. The ship seemed to roll further and further to leeward in each puff, and the Midshipmite, glancing down the companionway, gave a startled cry:

"Look at all that water!"

And it was enough to scare anyone out of his seaboots. There was at least a foot of water washing about on the cabin floor, with all the clothing from the starboard berth afloat in it! When she heeled in a puff it surged up to the deck carlins.

In a trice the Old Man threw her into the wind, though she was close to the snarling reef of Salmon Island, but to leeward of it. Down came the mainsail, and forthwith the pump—a good outside bilge pump, located on the starboard side of the raised deck—got to work. It seemed without effect. The Midshipmite, between efforts at the wheel, looked below and reported progress—very little progress. Had the ship started a butt, or split a plank? the Old Man wondered. For a moment the bottom sucker clogged, and he swiftly sized up the possibilities of beaching. Luckily, the wind was not so heavy as to heel her extremely when she was kept ragging along under the shortened sail, so the work of the pump was pursued pretty steadily.

KINGSTON YACHT CLUB WHERE THE BLUE PETER LAY.

THE HARBOR FRONT AT TRENTON, ONTARIO.

By and by the floating mattress below stranded on the cabin floor, and the Old Man gave a sigh of relief. Soon after that the pump commenced to suck. It was about time, for the sand of the beach of Amherst Island was showing up under the bows. Around the Blue Peter swung on the port tack, doing well now in the lee of the land—and the worst of the squall was over.

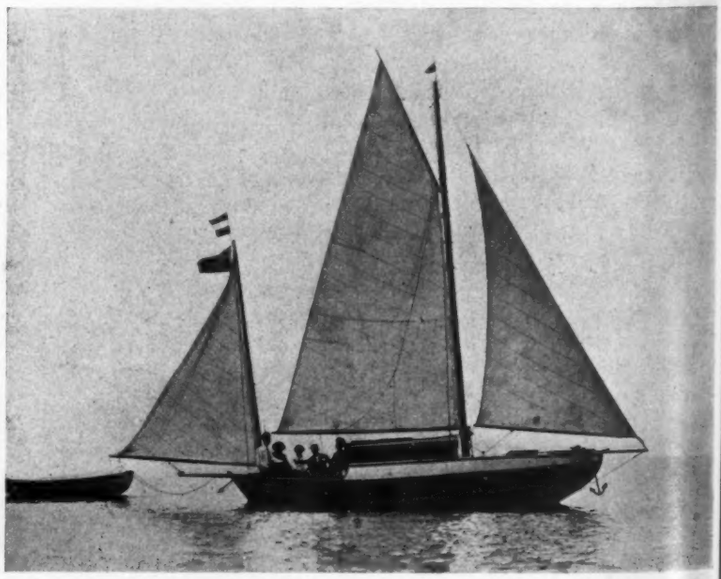
It was a wretched labor straightening things out in the water-soaked cabin, as the ship went stretching west and north, past the Brothers, into the sheltered waters of the long Adolphus Reach. The first thing was to find how the water came in, and this proved easy. The "sinking sink" in the galley was all to blame. The lazy plumber had omitted to fasten the cup-like collar that should have held the waste pipe to the basin. There was an opening an eighth of an inch wide all around it. Through this, when she heeled far on the port side, the water would spurt as from a hose nozzle. The pan of the sink itself was high enough above the water to avoid flooding, but the waste pipe was a death trap.

A little canvas and marlin quickly made the pipe opening temporarily safe, and the Blue Peter, weathering the Brothers, stretched over to the northward, fetching above Collins Bay. The Old Man had thoughts of lying in there over night; but, as the smoother water and gradual shift of the wind west and north promised a little progress, he put her about and stood up Adolphus Reach, on the starboard tack, under close-reefed mainsail, mizzen and jib. Amherst Island lay black to the southward, the lightless shore of Addington county blotted the northern skyline; but the stars were shining overhead, and, somewhat to the amazement of the Midshipmite, the Old Man located the little village of Bath on the north shore in the dark and sailed the Blue Peter up to the end of one of the two piers which constitute its waterfront. They couldn't tell anything about the place till they were ashore. It had no lighthouse, nor harbor; but one of the piers was of cement, and proved to be a steamboat landing, and, after dropping the ship in along it until her heel grated on the beach, they made her fast.

Bright and early Sunday morning they slipped away. The little village still slept in the strong sunshine, and only one or two early birds were down at the wharf to see them sail and watch the little bay steamer come puffing in. It was an ideal day for drying out. The Bay of Quinte was smooth as a mirror, but there was a steady northerly wind blowing over the starboard quarter. Hoisting only the jib, the Blue Peters first strung all their wet belongings out in the sun, while the ship gently blew away from the shore; then, setting the mizzen, they left her to look after herself and got a gorgeous—the term is used advisedly—breakfast. They had discovered ere this that the boat, thanks to her long keel, would steer herself by the hour, even in rough water, if her sails were trimmed properly. Later, they got the still-reefed mainsail on her, and, still later, shook the reef out, and went bowling along the sparkling bay and up the Picton Reach, past Deseronto, until the wind, coming ahead, they began a series of zig-zags for Belleville. But alas for plans! When close to the Telegraph Narrows they stood inshore too far and ran hard and fast aground on a flat rock bottom. The Blue Peter was drawing 4 feet, and when she fetched up there was not much more than 3. Heeling her over with the sails and heaving on the kedge was useless; the anchor promptly came home. The lighthouse keeper from the Narrows and three other men came over to lend a hand, and all worked till dark—without avail. The Blue Peters slept in woe that night, after a steam launch had refused to try to get them off and a gasolener had tried and failed; their only hope lay in the dredge tug, expected down at the Narrows on the morrow, and then they didn't know how much they would owe for the tow bill, after parting with all their worldly goods.

The morrow and the tug both came. The tugman was obliging, but when he sounded he found he could not get within two hundred yards of Blue Peter. The tug drew 9 feet of water, and the combined lines available would only reach 400 feet. The tug captain said the case was hopeless. The only thing to do was to go to Deseronto and engage the Rathbun Lumber Company's "alligator"—a sort of engine-on-a-raft, which travels over land and water indifferently, and is used in getting timber out of swamps. But perhaps, he added, some of the fishermen-farmers along the bay shore might have lines enough to reach.

So the Midshipmite bravely set forth, after being landed in the dinghy, to find a farmhouse in the wilderness of the north shore; and the Old Man, saying nothing, but thinking a lot, got down in the hold and passed up all the inside ballast—about half a ton of stone. There was plenty more within a hundred feet on the beach, so he hove it overboard without scruple. That should have lightened her up about 3 inches. Then all the heavy weights, such as the anchor, anchor chain, etc., he moved up to the lower edge of the deck. The booms were run off to the rigging and pennanted there, and the anchor finally lashed to the main boom end. All this gave her a considerable list to starboard. Then, clad in a bathing suit and deck-shoes, he went overboard, just as the Midshipmite reappeared with the flaming fruit of the sumach at her belt and the light of hope in her eyes. She had located a farmhouse, where lived an Indian family, who also earned a living fishing. Two little Indians had been despatched to the shanty, away up the shore, for all the rope they could get; and they would bring it back by boat.



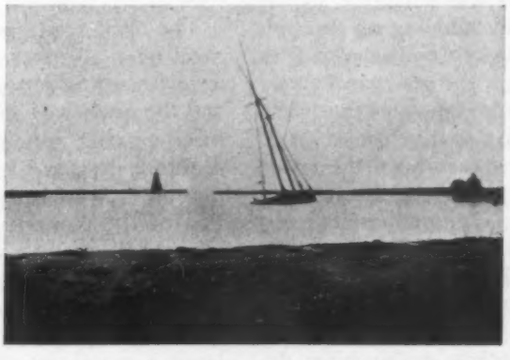
BLUE PETER.

This was good news, but the Old Man decided to try his own way. He got under the bows, and, using his shoulders as a jack, hove, and hove, and hove. She budged some. He tried the same scheme at the stern, and she budged some more. Finally he got her twisted so that her sails would fill, and the Midshipmite hoisted the mizzen and sheeted it flat amidships. That heeled her a little more, and he shoved and shoved and shoved, alternately at bow and stern. It was heavy work, but she began to wobble more and more and lifted a little as the small seas, running before a brisk little breeze, struck her. At last she was waterborne, and, with many a grinding rumble, slipped off the rock bottom. The Old Man shoved her out till she floated in water up to his chin, and then towed her out into deep water and anchored her, just as three little Indians—a girl and two boys—arrived with a thin, slabsided "shalloupe" and a coil of rope about a hundred feet long. They were set to work loading ballast on the beach, and brought off such a boat load that there was no room left for the littlest Indian, who had to be left behind, lamenting, when they pried their overloaded craft off and started for the Blue Peter. There was no more lift to their shalloupe than there is to a pierhead, and every little sea slapped over the low gunwale; but they got alongside without swamping or capsizing, and while the Old Man stowed their cargo the Midshipmite entertained the silent, dark-eyed children with the wonders of the never-failing gasolene stove and gave them tea and cake. They were sent away rejoicing with small pieces of silver, and some pennies for the disconsolate one on the shore.

By the time the Blue Peter was shipshape the breeze had lightened, but she was able to go tacking off up the bay after the dredge-tug had blown a friendly salute. Three heavy-laden thunder squalls rendered progress slow, but just after dark the Blue Peter cleared the lighthouse at the Nigger Narrows and began a last thrash against a freshening breeze for Trenton.

"The night was dark as one black cat." Baker's Island had to be dodged. The course led south of it, and then northwest across the Bay of Trenton. The Old Man got the idea that he was to the north of the steamboat channel up to the Murray Canal, which he would have to follow till past the island, and, consequently, shortened up his port tacks and lengthened the starboard ones. She was going like a steamboat, and he was getting three and four fathoms with every cast of the lead, when the bumpety-bump-bump-bump of boulders under the keel said somebody was a liar. She was on the starboard tack at the time and working into the channel, as the Old Man thought; so, instead of tacking ship, he put the wheel hard up, rolled her down to her bearings by bringing the wind abeam with the sheets trimmed flat, and pounded her over the reef that way. Then he shook her up, and, as she hung in the wind, he got an oar over the side, found bottom at less than 5 feet, and discovered that the further she went the worse things seemed, so he anchored in barely enough water to float her and went exploring in the dinghy in the dark.

He found he was away to the southward of the steamboat channel. The ship was within a hundred feet or so of the bank. Far away blazed what he had taken for the lights of an excursion steamer, but what was really the illumination of the head of the Murray Canal. Getting it in line with the Nigger Light showed the Blue Peter some 300 yards out of the channel. After regaining the ship he hove up and towed her, with herculean efforts, towards deeper water, with boulders every now and then biting at the keel, and reached the steamboat channel at last. Crossing to the far side of it, where Baker's Island loomed vaguely in the blackness, he anchored for the night, in four fathoms, on a soft bottom, and turned in for the sleep of the just.



IN PORT HOPE HARBOR. IT WASN'T SO SMOOTH WHEN THE BLUE PETER WENT IN.

Wednesday morning, with its southerly wind, blew them on up the Murray Canal in two pleasant hours, and, after tacking down Presque Isle Bay, the Blue Peter was in Lake Ontario once more. It seemed so good to get into the deep blue-green water after dodging over Quinte's shoals! There was a big roll outside, and while the ship was diving into it, clearing Presque Isle Light the main peak halyard block carried away, and the Old Man was at the masthead an hour, shipping a new one and overhauling the gear, which is not the most desirable of jobs when there are no spreaders for a toe-hold, no boatswain's chair to rest in, and the boat is trying to loop-the-loop. But for this little performance the run to Cobourg was without incident—the sea always big, the wind light, and the time fairly good, for the 35 miles of the day's run took just eleven hours, in spite of stops in the canal, head winds in Presque Isle Bay, and the mainsail out of commission for an hour.

The next two days it blew a gale down the lake, and the Blue Peter, with anchor down and stern line on to a pier, rode it out in Cobourg harbor, in company with the Queen City Yacht Club sloop Meteor, encountered earlier in the cruise, and now, like the Blue Peter, homeward-bound. The following Saturday it moderated, but the sea still ran high. The wind came in fitful flaws—west, southwest, northwest, west again, shifting eight points sometimes without any warning. It took seven hours to wrestle the seven miles from Cobourg to Port Hope, and the two craft went in there lugging canvas and with cockpits flooding through the lee scuppers, while pier-end spectators watched with eyes bulging out of their heads. But next morning a fine north breeze had flattened the sea out, and the pair fared forth again. The Blue Peter was the earlier bird, and was up along the barren clay banks of Newcastle, 15 miles from Port Hope, ere the Meteor overhauled her. After that the wind fanned out and it was a drift.

At this style of going the yawl showed surprising speed. Both boats overhauled a heavy stone-hooker sloop that had left Newcastle ahead of them, and the Blue Peter kept on crawling after all the wind had apparently vanished and the lake was left like a mirror of quicksilver. At sundown she was some two miles ahead of the stone-hooker and the Queen City sloop, and, as there seemed no prospect of wind all night, she was headed inshore, finally reaching soundings by towing, and anchored, with mizzen set as a riding sail, in five fathoms on a boulder bottom. It wasn't a comfortable place to be caught in, but it would only take a minute to hoist the jib and get away if the wind came in; so the Blue Peters turned in for the night, the Old Man noticing, before hanging up the riding light, that, although no wind could be felt, the ship was nosing eastward with the slight pressure of the riding sail. And in the morning, sure enough, there was a little trickle of easterly wind; so up came the anchor and off they floated for Port Oshawa, which consists of a summer colony, one good pier and a warehouse. There is no harbor shelter and no lighthouse, but there is good holding ground off the pier-end. Setting sail again, they floated peacefully out past the bold profile of Raby's Head and on up the lake, with light following zephyrs helping along, until Whitby faded away on the starboard quarter and the High-

(Continued on page 72.)

The Carburetor—Its Adjustment and Care

A FEW TIMELY HINTS AND SUGGESTIONS GLEANED FROM THE EXPERIENCE OF AN OLD MOTOR-BOATMAN

By STILLMAN TAYLOR

AS the carburetor plays a very necessary and important part in the operation of the modern gasolene engine, every boatman should make it a point to understand its working principles and to become thoroughly familiar with the several adjustments provided for regulating the fuel and air supply. Owing to the fact that the carburetor relates so very closely to the power efficiency of the engine, a good working knowledge of this subject is really essential, and, if thoroughly understood, the boatman will be able to avoid many of those annoying troubles which are so often caused by misdirected tinkering with the float, the needle-valve and the air supply valve. Indeed, many misfiring troubles are often traced to unnecessary fussing with the carbureting apparatus, and in the event of such troubles the novice should not be too hasty in altering every possible adjustment with the forlorn hope of finding a remedy. Proceed rather in a systematic manner, and bear in mind that a very slight turn of the needle-valve will make a vast difference in the quality of the "gas"; that undue raising the float on its spindle will result in flooding, whilst if the float is lowered below its proper level the engine will be starved. The same advice applies with equal force to the spraying nozzle or jet, all of whose adjustments and troubles will be taken up in their logical order. However, as my remarks are chiefly directed to the amateur (though it is hoped the seasoned skipper may find a hint or two worth reading), it will be well to begin at the beginning and mention briefly the two prominent types of carbureting devices and their adjustments before taking up the common troubles which are likely to befall any motor at almost any time.

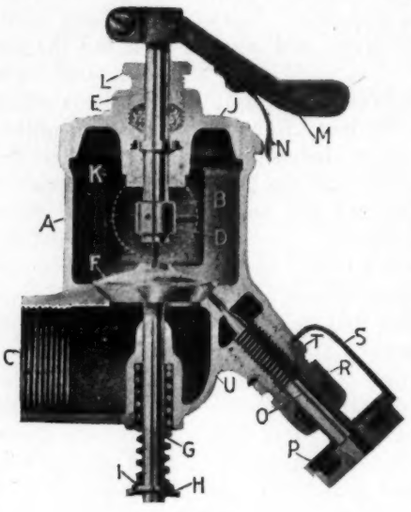


FIG. A.

O—Needle valve.
S—Spring clip.
P—Hand wheel.
R—Set screw.
G—Air valve spring.
C—Air intake.
A—Mixture outlet passage to cylinder.
M—Throttle handle.
N—Spring clip.
L—Adjusting nut.

It is the function of the carburetor to mix air with the liquid fuel in certain proportions to produce an explosive mixture, and the manner of generating the vapor or gas may be accomplished in several ways. Prominent among the carbureting devices in use during the early days of the internal-combustion engine, may be mentioned the surface and the wick carburetors. The surface carburetor of the ebullition type was quite successfully used by Daimler and other pioneer builders of automobile motors, and the gas was produced by air passing down through a central air tube and bubbling up through the fuel. The wick carburetor was also moderately successful in automobile practice, in which form of design the gas was formed by capillary attraction—that is, the air was saturated with the fuel by passing it over a bundle of wicks or a sponge soaked with gasolene. The modern carburetor is the perfection of the crude ebullition type, and to the old-time wick vaporizer the modern mixing valves may be traced. These types are now obsolete and have been supplanted by modern apparatus, which, being provided with necessary adjustments for regulating the fuel and air, has greatly increased the flexibility and power efficiency of the modern gasolene motor.

There are two prominent types of modern carbureting devices—the float-feed spray carburetor and the mixing valve or vaporizer. The mixing valve has been in use since the inception of the marine engine, and there can be no question but this form of carburetor is eminently satisfactory for supplying the mixture for one and two-cylinder motors. In the latest designs of generator valves one notes many improvements over the original James mixer. One noteworthy improvement is in placing the needle-valve closer to the air valve seat, which greatly assists in generating a better balanced mixture.

As may be noted by referring to Fig. A, which is a sectional drawing of a well-known generator valve, the air valve *F* is of the improved mushroom form, the head being provided with a screw-driver slot for convenience in grinding. The gasolene feed is controlled by a threaded needle-valve *O*, which is locked in any desired adjustment by means of a spring clip, *S*, working in serrated notches on the hand wheel *P*. The mixture volume is regulated by the handle *M*, which controls the revolving throttle *D*, which opens and closes the outlet opening leading to the cylinder. There are several makes of generator valves on the market, and, while this type of carburetor is occasionally used for supplying the gas to four-cycle engines, it is, perhaps, more successful when used on two and three-port types of two-cycle engines. In point of fact, this vaporizer is best adapted to the usual two-port type, and for this purpose it is, in the writer's opinion, quite as satisfactory as the more delicately balanced float-feed sprayer carburetor, and for engines of slow and medium speeds the boatman will find that the fuel consumption will be considerably less when the vaporizer is used. Another point in their favor (and this is an important consideration when the engine is used in open boats) is their marked simplicity and durability, there being but few parts, and all of these made of bronze, to ensure long service. Although the generator valve is occasionally used for supplying the fuel to the four-cycle engine, it does not seem to be sufficiently sensitive for this purpose, and the lack of a wide range of adjustment makes the vaporizer valve quite unsuited for producing the mixture for high-speed, multi-cylinder engines of the four-cycle type.

The float-feed sprayer carburetor is a considerable improvement over all other carbureting devices, in that a wide range of adjustments is provided for regulating the fuel and air supply, and the quality of the mixture may be very delicately adjusted to meet varying conditions of service. Although there are many different designs of spraying carburetors, the principle of operation and adjustment is practically the same in all, and a description of the working parts of any given make will suffice to acquaint the boatman with the essential requirements of this important subject.

Unlike the mixing devices of the surface type, where the gas is produced through evaporation, the float-feed sprayer carburetor generates the vapor in a purely mechanical manner by forcing the liquid hydro-carbon through a small orifice or jet in

the form of a fan-like spray, which is quickly vaporized by mingling with the inrushing air passing the jet. The modern type of carburetor is entirely self-contained, and the gasolene enters from the supply pipe into that part designated as the float chamber. This chamber contains a float (either a disc of cork or a hollow ring of copper or aluminum) fastened to a lever or arm, to one end of which is attached the float, the other end being secured by a hinge joint to the side of the float chamber. The float needle-valve controlling the incoming fuel from the tank is located in the passage leading to the float chamber, and rests upon the arm carrying the float. The object of the float is to automatically regulate the flow of gasolene as it is consumed by the engine, and this is accomplished by the buoyancy of the float, which rises and falls as the fuel is raised or lowered in the float chamber. As one end of the float needle-valve rests upon the float arm, it is governed by it, and as the engine consumes more fuel and the level becomes lowered in the float chamber the float is depressed, the needle drops, and thus opens the passage leading to the supply pipe and increases the flow of gasolene. As the engine speed decreases less gasolene is used and the fuel level rises, the arm pushing the needle-valve back into its seat and automatically shutting off the flow of gasolene.

For the purpose of illustrating the manner of adjusting a modern float-feed sprayer carburetor, the writer has picked out at random a well-known instrument, which is very well shown in detail in Fig. B. In operation, the gasolene flows from tank to the carburetor through fuel supply pipe connected to coupling *Z*, thence passes through gasolene strainer *Z*-1 and is admitted to the float chamber by the action of the float, which controls the needle-valve, *O*. Air is admitted through the adjustable air-cup *C*, which will give the proper proportion of air necessary for all ordinary marine motors running from about 350 to 500 revolutions per minute. In case more air is required, an additional supply is provided by the auxiliary air valve *V*, which may be adjusted to a nicety for either low or high engine speeds by means of adjusting nuts *K* and *H*, which, by increasing or decreasing the tension of high-speed spring *R* and low-speed spring *S*, control the lift of the air valve. When running at low speeds the motor will consume only enough fuel to keep the engine turning over; but as more gasolene is needed as the motor is speeded up, more gasolene is automatically supplied by the action of the float needle-valve. The suction of the moving piston draws air from air-cup *C*, and this, in passing by the spraying nozzle *D*, sucks up a few drops of gasolene in the form of a fine spray, which is further mixed with the extra air admitted by the auxiliary air valve *V*. The vapor of gas is then drawn into the intake pipe or manifold leading to the combustion chamber of the several cylinders. The fuel level in the float chamber is regulated by adjusting nut *M*, and the volume of mixture is controlled by throttle *T*, to which controls rods may be conducted to the bridge deck, the cockpit, or any part of the boat convenient to the helmsman.

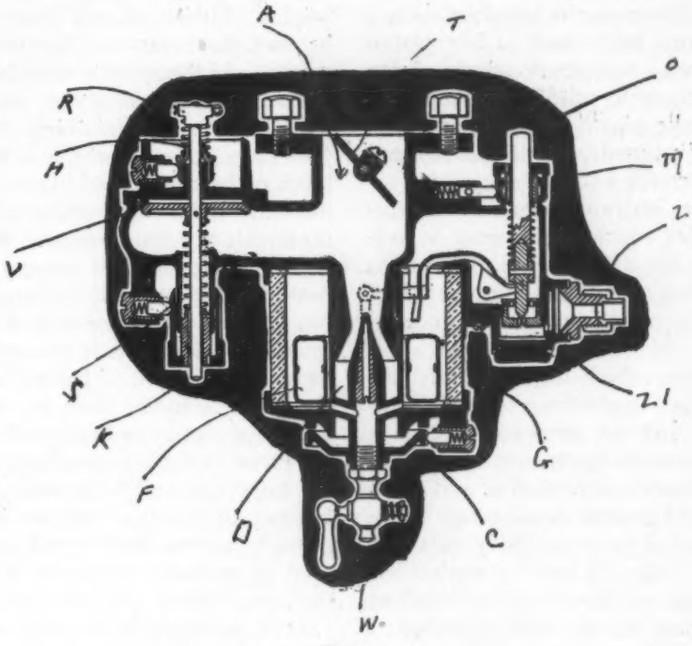


FIG. B.

A—Mixing chamber.
T—Throttle.
O—Needle valve.
M—Fuel level adjusting nut.
Z—Gasolene coupling to supply pipe.
Z1—Gasolene strainer.
G—Float chamber.
C—Air cup (fixed air supply).
W—Drain cock.
D—Spraying nozzle or jet.
F—Float.
K—Slow-speed adj. nut of auxiliary air valve.
S—Low-speed spring.
V—Auxiliary air valve (mushroom type).
H—High-speed adjusting nut.
R—High-speed spring.

Taking up the several adjustments of this type of carburetor, the first thing necessary is to ascertain the height of the fuel in the float chamber. Although no hard-and-fast rule can be given for making this adjustment, the starting point may be approximated closely by adjusting the fuel level about an inch or so from the bottom rim. This adjustment is made by nut *M*. After determining the level of the fuel, the carburetor may be primed by lifting needle-valve until the float chamber is filled. This done, the air-cup *C* should be adjusted, which is conveniently accomplished by screwing up the disc until it is closed, then opening it by giving the cupped disc two full turns, which should give sufficient air to complete vaporation at all average engine speeds. Now start the motor, and retard both the spark and throttle controls as far as possible without bringing the motor to a stop. The low-speed spring *S* of the auxiliary air valve *V* should now be adjusted so that the motor will fire regularly and run smoothly without missing at low and medium speeds. Next, advance the spark and gradually open the throttle until it is in its maximum position. In case the engine backfires on an open throttle, the high-speed spring *R* should be turned until it runs smoothly and at its highest speed. It should be mentioned that the flexibility of an engine is greatly influenced by this auxiliary air-valve adjustment, and if these two adjustments are properly looked after the engine should run smoothly without misfiring when the spark and throttle are opening to give an early spark and admit more gas required for the highest engine speeds. Other makes of carburetors are provided with like or similar adjustments, and, while the exact method of procedure varies somewhat with the different makes, the reader should have no difficulty in adjusting his particular make of mixer if the foregoing suggestions are carried out. In fact, by adjusting the carburetor by this systematic method any boatman can tune up his engine in a few minutes.

As the quality of the gas is a matter of much importance, the boatman should endeavor to ascertain by experiment the best balanced mixture for his particular engine. It may be remarked that the best mixture is one which will produce maximum engine speed with the least consumption of fuel, and this point of balance will be found to vary considerably, depending upon the size and type of the motor, as well as upon the particular design of the carburetor used. It may be accepted as good advice to adjust the carburetor to give as "lean" a mixture as possible without reducing the power of the engine, and if this is done the "miles-per-gallon" record will be much increased. It is, of course, perfectly

obvious that a certain amount of fuel is necessary to produce full rated engine power; but when this point is reached there can be no advantage gained by further increasing the proportion of gasolene.

With the single exception of racing craft, where speed alone is the important requisite, a rich mixture should be avoided, as a rich mixture will be certain to interfere with the flexibility of any engine and tend to choke the motor and cause misfiring at low speeds, although the motor will probably run well at higher speeds. Of course, this is a desirable adjustment for racing purposes, but is a decided disadvantage for ordinary running, where comfort rather than the pursuit of the "speed bug" is most desired. A rich mixture will also rapidly foul the plugs and valves (if of the four-cycle type), and the motor will have a marked tendency to overheat. A "lean" mixture will, on the other hand, tend to "starve" the motor, which will not develop its full rated power, owing to insufficient gasolene. If the motor is supplied with a rare mixture of this kind it may run fairly well at low piston speeds, but when the throttle is opened and spark advanced for high running the engine will commence to misfire, accompanied by popping in the carburetor or intake pipe. The rich and lean mixtures are, of course, extreme adjustments, and the correct adjustment is the happy medium between the two.

As the carburetor is a very sensitive instrument, one could mention quite a formidable list of troubles which might occur to prevent proper carburetion of the fuel; but as the cause of the difficulty is, in the majority of cases, due to certain failures, it will be sufficient to briefly mention the most common sources of trouble.

With the exception of the mixture, which may be called the principal carburetor trouble, water in the gasolene or carburetor is a most prolific cause of trouble, and the presence of even a very small quantity of water will be enough to make starting difficult and cause the engine to run spasmodically, misfire, and often come to a complete stop. Water is of greater density than gasolene, and as it settles to the bottom it is most likely to cause trouble when the fuel is low in the tank. When the engine has been standing unused for any length of time it is an excellent plan to drain the carburetor by means of the cock provided at the bottom of the float chamber for this purpose. This will remove any water or sediment that may have accumulated during the period of idleness. To separate the water from the fuel as far as practicable, the boatman should always filter the gasolene through a chamois skin when filling the tank. Perhaps the most convenient way for doing this is to tie a piece of chamois skin over the mouth of a large-diameter funnel, having the skin sufficiently large to sag and so form a rather deep bag. The chamois will be found porous enough to let the gasolene run through fairly quickly, but will catch any sediment or water, and so largely eliminate trouble from this source.

Carburetor troubles are sometimes caused by a poor grade of gasolene having a lower specific gravity than a good grade of spirit. Starting troubles are often due to the fact that gasolene quickly becomes stale through evaporation, the lighter and more volatile spirits escaping into the air, leaving a denser residue which is not so readily vaporized. The careful boatman who has a liking for finding things out for himself will find a hydrometer useful for testing out different samples of gasolene. This instrument consists of a glass tube with a bulb on one end similar to a thermometer, which is weighted with mercury or quicksilver to keep it upright in the solution to be tested. This tube is graduated, and in use it sinks until a certain mark on the scale is level with the surface of the fuel; this reading indicates the particular specific gravity or density of the gasolene. The temperature of the fuel will be found to affect the hydrometer reading to a considerable extent, and, as the instrument will sink deeper in warm than in cold gasolene (and so register a higher test), this should be taken into consideration.

Priming, or filling the float chamber with fresh gasolene, is a familiar operation to all engine users, and this is sometimes desirable for securing an easy start. Continued flooding of the carburetor is caused by some defect in its working, and, as flooding is a pretty sure indication that something is out of order with the float or needle-valve, the matter should be given attention as soon as the symptoms are discovered. In many cases continued flooding of the float chamber is caused by a badly seating needle-valve, probably due to a small particle of sand or grit on the metal seat. In other cases the trouble may be traced to a fuel-logged cork float or a leaking metal one. If the valve is found to be the cause of trouble, it should be carefully ground in the same manner as any valve, by rotating it in its seat until both are smooth and bright. Either oil and emery or pumice stone and water may be used, the latter combination grinding very smoothly, but more slowly. If the spindle carrying the float is found to be bent, the float should be removed and the damaged spindle carefully straightened. When doing this care should be taken not to injure the soft metal, and it is a good plan to rest the spindle on a block of hardwood and interpose a second piece between the spindle and the hammer, and remedy the trouble by a few judicious taps with a light hammer. If flooding is suspected to lie with the float, examine the metal for minute cracks and holes, which must be soldered up. If any considerable amount of gasolene has worked inside the hollow float, it may be easily removed by punching a larger hole through the metal shell, or the float may be placed in a pan of boiling water, when the heat will force out the gasolene in the form of vapor. As metal floats are made of very thin copper or brass, it is best to use soft solder and to heat the metal as little as possible. Only use sufficient solder to repair the puncture, and be careful that no solder drops inside, or the balance of the float will be interfered with. Cork floats occasionally become fuel-logged, and thus lose their buoyency. This may be remedied either by putting in a new cork, or by drying out the old one and then giving it a couple of coats of shellac varnish to make it liquid-proof. If trouble develops with the float while on a cruise, the heavy float may be slightly raised by shifting it up on its spindle, thus counteracting its tendency to sink in the fuel. A punctured metal float may be doctored up in the same fashion, by melting the adhering solder, shifting the float to ride at a slightly higher level, then re-solder in place.

In case the engine should suddenly stop and an examination disclose the ignition system in working order, the cause of the failure will be very likely found to be caused by either lack of fuel or a stoppage in the fuel pipe. Look to the tank, and if it contains sufficient gasolene, next examine the gasolene filter, which is located between the end of supply pipe and the float chamber of the carburetor. This filter consists of a fine-mesh brass gauze, and needs an occasional cleaning to remove the sediment strained out of the fuel. If the trouble is not at this point, the next logical point is the supply or feed pipe; but before unscrewing the connections first ascertain whether or not the fuel is reaching the carburetor. This may be quickly determined by simply opening the drain cock of the carburetor, and if the gasolene flows out in a good, steady stream the pipe line is free and clear. In case but a faint trickle comes from the cock when there is a good supply in the tank, the supply pipe is obstructed somewhere in its length and the fuel should be turned off at the tank and the carburetor emptied, after which the unions at both ends of the pipe line may be unscrewed and the pipe cleaned out with a length of stiff wire.

(Continued on page 72.)

Navigation for the Amateur

A SHORT COURSE IN THE SIMPLER METHODS OF FINDING POSITION AT SEA—THE USE OF SEXTANT AND CHRONOMETER

By CAPT. EDMUND MORTON

PART V—STAR LIGHTS

BEFORE closing this series of articles on the simpler forms of navigation, it will be well to refer briefly to the methods of finding a position by observations of the stars. Star sights are often invested with a good deal of awe by the amateur, when, as a matter of fact, one of the simplest methods of finding latitude is by an observation of the Pole Star.

As stated in a previous chapter, the North Star is very near the celestial pole, and if it could be seen by an observer at the equator of the earth it would appear on the horizon—that is, without any altitude. As the observer travels northward the altitude of the celestial pole increases exactly as the observer's latitude increases until the 90th degree is reached at the North Pole of the earth, where the North Star would be nearly in the zenith. Therefore the Pole Star can be used for latitude at any time when visible and the horizon is sufficiently clear. This star appears to describe a tiny circle around the celestial pole, with a radius of a little more than one degree in length, so that twice during twenty-four hours—that is, when exactly east or west of the celestial pole—the true altitude will be the observer's latitude without any correction. When the star is directly above or below the celestial pole the correction amounts to 1° 11′, to be added or subtracted, according to its position. The correction to be applied to the altitude varies according to the part of the circle the star is on at the time of the observation—that is, we must know its hour angle. In the appendix of the American Nautical Almanac are several tables to be used for finding the latitudes by altitudes of the Pole Star. The method is to reduce the time of observation to local sidereal time. From this subtract the star's right ascension, which will give the hour angle. With the hour angle and declination take out the correction from Table IV, which is to be added or subtracted from the altitude, according to the sign given. The result will be the latitude. Example: April 12, 1911, 7:20 p. m.

Local apparent time	7h. 20m. 00s.	Obs. altitude	38° 40′
Equation of time	+ 55s.	Refraction and dip	— 05′
Local mean time	7h. 20m. 55s.	True altitude	38° 35′
Reduction table No. 3	1m. 12s.	Cor. Table IV	+ 23′
Green, Sid. time	1h. 18m. 17s.	Latitude	38° 58′ N.
Local Sid. time	8h. 40m. 24s.		
Right As. Polaris	1h. 26m. 00s.		
Hour angle	7h. 14m. 24s.		

Table No. IV. Correction + 23m.

In the abridged form of the Nautical Almanac issued by the leading nautical stores will be found a table for correcting the altitude of the Pole Star at any time, with simple instructions how the correction is to be applied. All that is needed is the right ascension of the meridian and the star's altitude. The R. A. M. is found by adding the apparent time at ship to the sun's right ascension, taken from the Nautical Almanac on the given date.

Example: April 12, 1911, 7:20 p. m.

Apparent time ship	7h. 20m.	Obs. altitude	38° 40′
Sun's right ascension	1h. 21m.	Refraction and dip	— 05′
R. A. of the meridian	8h. 41m.	True altitude	38° 35′
		Correction	+ 23′
Correction for 8h. 40m. Table	+ 23m.	Latitude	38° 58′ N.

The latitude found in this way is only an approximate one. More rigorous methods are available for those who wish to use them, but their explanation here would carry us too far.

In order to determine latitude and longitude by observations of the stars and planets, it is necessary to use terms and quantities which are not needed in like observations of the sun—namely, right ascension and sidereal time, a brief explanation of which will now be given.

We have used mean solar time and apparent solar time—time reckoned by the daily course of the sun. Sidereal time is that time which is calculated by the stars, the length of a sidereal day being the time elapsed between the two successive transits of the same star over the same meridian. The stars are mapped out in the heavens much the same as cities and towns are located on the earth, the star's declination being the same as latitude and right ascension the same as longitude on the earth. The longitude, or right ascension of a heavenly body, is reckoned from the vernal equinox (first point of Aries) east to 360 degrees in the circuit of the heavens, instead of 180° east and 180° west from the meridian of Greenwich, as used on a map of the earth.

The sun's position among the stars is found to be continually changing, every day apparently moving more to the eastward. These daily positions have been recorded by astronomers, and the path of the sun is found to be a great circle, called the ecliptic, which crosses the celestial equator twice during the course of a year and returns to the same position at the end of each year. The places in the heavens where the ecliptic crosses the celestial equator in March and September are called the vernal and autumnal equinoxes. The vernal equinox is the point in the heavens from which the position of all heavenly bodies are reckoned in an easterly direction throughout the circle of the heavens, and is usually expressed in hours, minutes and seconds.

The sidereal day is nearly four minutes shorter than the solar day. Noon by sidereal time is the time when the vernal equinox crosses the meridian instead of the sun, as in a solar day. On March 20 the mean solar time and sidereal time will agree. As the sidereal day is nearly four minutes shorter than the solar day, the sidereal time gains about two hours each month, making a difference of exactly one day in the course of a year, the solar year having 365¼ days and the sidereal year having 366¼ days.

Stars which now rise soon after sunset will soon be found near the meridian at sunset, which shows how a day reckoned by the stars is shorter than a solar day, and also shows the easterly motion of the sun through the heavens.

Sidereal time may be converted into solar time and vice versa. The right ascension and declination of all the planets and stars of any use to the navigator are given in the Nautical Almanac; also, the Greenwich mean time of their passing meridian. The ephemeris of the brightest planets is given in separate tables for each month. The hour angle, of course, changes at the rate of 15 degrees each hour (sidereal time), making a circuit of the heavens in twenty-four hours. The sidereal time, or right ascension of the mean sun, is also given in the Nautical Almanac.

Meridian altitude of stars or planets can be used to determine the latitude by the same method as is used with the sun. To find the latitude by a meridian altitude of a star is the most simple calculation used in navigation. The declination does not change perceptibly for years, and can be used just as it is taken from the almanac; while for the planets the hourly corrections to be applied are found in an adjoining column, as in the case of the sun.

The chief difficulty is in getting a reliable altitude when the star is on meridian. A familiarity with the stars and planets is also desirable, so as to recognize them readily when seen. A brief study of the heavens with the aid of a star map will soon give one a knowledge of the outlines of the principal constellations and their brightest stars.

Everyone knows the Big Dipper, and that "the pointers" are directed toward the Pole Star. The curve of the handle, if extended, would pass through Arcturus and from thence to Spica. At right angles to a line drawn from "the pointers" to the Pole Star will be found Vega and Capella, at about equal distances on each side of the Pole Star. Capella is easily recognized by its brightness and yellowish color, and by "The Kids"—three fainter stars near by, forming a small isosceles triangle. Vega, the blue star, is seen at the apex of a small triangle joined to a small parallelogram forming the constellation of Lyra. The constellation of Cassiopea lies on the opposite side of the Pole Star to the Dipper, and at about the same distance away. It is formed of a zigzag of stars forming an imperfect W. Arcturus, Spica and Denebola form an equilateral triangle. Extend the line from Arcturus through Denebola, and it will cut Regulus. The Pole Star, Vega and Arcturus form a right angle triangle, the right angle being at Vega.

Orion's sheath and belt are nearly as well known as the Dipper. A line drawn in a N. W. direction through Orion's belt will pass through both the Hyades and Pleiades. This line extended S. E. from Orion will cut Sirius (the Dog Star, and brightest star in the heavens). The brightest star in the Hyades is the well-known reddish star Aldebaran. On either side of Orion, at right angles to the line previously drawn, are seen Betelgeuze, to the N. E., and Rigel, the white star, to the S. W. The "heavenly twins," Castor and Pollux, are found about half-way between Orion and the Dipper. Castor is a double star, although Pollux is the brightest. Altair is the brightest star in the constellation of Aquila, and is the center star of three which appear in a straight line with one another at equal distances and pointing directly for Vega. Antares, a bright red star of the first magnitude, is easily distinguished in the wonderful constellation of Scorpio.

Having become acquainted with the most conspicuous configurations in the sky, the others may be readily found when sought.

When recourse to the stars or planets is meditated for latitude, look up the times of their passing meridian in the Nautical Almanac and see which bodies will be near the meridian during the twilight, either morning or evening. Having decided which body to observe, find the exact time of its passing meridian. This time is given in the Nautical Almanac for Greenwich mean time, or it can be found by subtracting the right ascension of the sun from the right ascension of the star. For instance, we wish the time Sirius passes meridian on April 15, 1911.

Right ascension Sirius from N. A.	6h. 41m. 13s.
Right ascension Sun from N. A.	1h. 30m. 55s.
Sirius on meridian	5h. 10m. 18s.

When it happens that the R. A. of the star is less than the R. A. of the sun, add twenty-four hours to the star's R. A.

On March 20, 1911, Sirius crossed the meridian at 6:52 p. m. The declination of Sirius is 16° 36′ S. The meridian altitude was found to be 43° 28′, bearing south. The altitude is corrected for refraction and dip of the horizon only, which amounts to about 5 minutes, and is always to be subtracted from the altitude.

Obs. altitude	43° 28′	
Dip and refraction	— 05′	
True altitude	43° 23′	S.
	90° 00′	
Zenith dist.	46° 37′	N.
Star's declination	16° 36′	S.
Latitude	30° 01′	N.

To find the longitude by an altitude of a star or planet, proceed as follows:

Take the corrected altitude, latitude and polar distance and proceed the same as if working a sight of the sun. This result will be the hour angle, and must always be taken from Table No. 44 in the column of apparent time marked P. M. If the body is east of the observer's meridian, subtract the hour angle from the right ascension of the body; but if west, add them together, the result being the local sidereal time. To the correct Greenwich mean time add the sidereal acceleration found in Table No. III of the American Nautical Almanac and the sidereal time of Greenwich mean noon, which gives the Greenwich sidereal time. The difference between the Greenwich sidereal time and the local or sidereal time at ship will be the longitude in time. The local mean time may be found and applied to the Greenwich mean time, as in finding the longitude by an observation of the sun.

On April 11, 1911, ship was in Lat. 35° 57′ N., Long. 74° 35′ W., approximately, at 6h. 45m. p. m. The observed altitude of Venus was 26° 57′, bearing west. Chronometer time 11h. 32m. 45s. Chronometer slow 12m. 04s. Declination of Venus 19° 17′ N.

Obs. altitude	26° 57′		
Ref. and dip	— 06′		
True altitude	26° 51′		
Latitude	35° 57′	secant	.09177
Polar dist.	70° 48′	cosecant	.02508
	2)133° 31′		
Half sum	66° 45′	cosine	9.59632
	26° 51′		
Remainder	39° 54′	sine	9.80716
			2)19.52033
Hour angles	4h. 41m. 10s. =		9.76016

Chronometer time	11h. 32m. 45s.
Chronometer slow	12m. 04s.
Greenwich mean time	11h. 44m. 49s.
R. A. M. Sun	1h. 16m. 16s.
G. S. T.	13h. 01m. 05s.
R. A. Venus	3h. 21m. 42s.
Greenwich hour angle	9h. 39m. 23s.
Hour angle	4h. 41m. 10s.
Long. in time	4h. 58m. 13s.
Converted into degrees and minutes:	
Longitude	74° 33′ 15″ W.

The same longitude found, reducing it to local mean time, as follows:

Hour angle	4h. 41m. 10s.
R. A. Venus	3h. 21m. 42s.
R. A. of meridian	8h. 02m. 52s.
R. A. sun	1h. 17m. 28s.
Local Ap. T.	6h. 45m. 24s.
Equa. time	+ 1m. 12s.
Longitude, mean time	6h. 46m. 36s.

Chronometer time	11h. 32m. 45s.
Chronometer slow	12m. 04s.
Greenwich mean time	11h. 44m. 49s.
Longitude, mean time	6h. 46m. 36s.
Longitude in time	4h. 58m. 13s.
Longitude	74° 33′ 15″ W.

The difference between the local sidereal time and the Greenwich sidereal time may be used to determine the longitude:

Chronometer time	11h. 32m. 45s.
Chronometer slow	12m. 04s.
Greenwich mean time	11h. 44m. 49s.
R. A. M. S.	1h. 16m. 16s.
Greenwich Sid. time	13h. 01m. 05s.

Stars H. A.	4h. 41m. 10s.
R. A. Venus	3h. 21m. 42s.
Local Sid. time	8h. 02m. 52s.
or R. A. of meridian.	
Greenwich Sid. time	13h. 01m. 05s.
Local Sid. time	8h. 02m. 52s.
Longitude in time	4h. 58m. 13s.
Longitude	74° 33′ 15″ W.

On April 30, 1911, ship was in Lat. 21° 10′ N., Long. 76° 04′ W., approximately, at 6:45 p. m. The observed altitude of Venus 30° 06′, bearing West. Chronometer time 11h. 38m. 55s. Chronometer slow 13m. 10s. Declination of Venus 24° 20′ N.

Obs. altitude	30° 06′		
Cor.	— 05′		
True altitude	30° 01′		
Latitude	21° 10′	secant	.03034
Polar dist.	65° 40′	cosecant	.04040
	2)116° 51′		
Half sum	58° 25′	cosine	9.71911
	30° 01′		
Remainder	28° 24′	sine	9.67726
			19.46711
Hour angle	4h. 22m. 15s. =		9.73355

Chronometer time	11h. 38m. 55s.
Chronometer slow	13m. 10s.
Greenwich mean time	11h. 52m. 05s.
R. A. M. Sun	2h. 31m. 14s.
G. S. T.	14h. 23m. 19s.
R. A. Venus	4h. 56m. 54s.
Greenwich hour angle	9h. 26m. 25s.
Hour angle	4h. 22m. 15s.
Longitude in time	5h. 04m. 10s.
Converted into degrees and minutes:	
Longitude	76° 02′ 30″ W.

On May 12, 1911, ship was in Lat. 38° 30′ N., Long 74° 15′ W., approximately, at 7:30 p. m. The observed altitude of Jupiter 17° 27′ to the east of the meridian. Chronometer time 12h. 10m.

03s. Chronometer slow 13m. 34s. Declination Jupiter 12° 57′ S. Equation of time 3m. 46s., to be subtracted from apparent time.

Obs. altitude....	17° 27′		
Ref. and dip....	— 05′		
True altitude....	17° 22′		
Latitude	38° 30′	secant	.10646
Polar dist.....	102° 57′	cosecant	.01119
	2)158° 49′		
Half sum.....	79° 24′	cosine	9.26470
	17° 22′		
Remainder	62° 02′	sine	9.94607
			2)19.32842
Hour angle....3h. 39m. 54s. =			9.66421

Greenwich mean time....	12h. 23m. 39s.
R. A. meridian sun.....	3h. 18m. 35s.
Greenwich Sid. time.....	15h. 42m. 14s.
R. A. Jupiter.....	14h. 25m. 07s.
Greenwich H. A.....	1h. 17m. 07s.
Star's H. A.....	3h. 39m. 54s.
Longitude in time.....	4h. 57m. 01s.
Longitude	74° 15′ 30″ W.

R. A. Jupiter.....	14h. 25m. 07s.
Hour angle.....	3h. 39m. 54s.
R. A. meridian.....	10h. 45m. 13s.
R. A. sun.....	3h. 14m. 49s.
Local Ap. time.....	7h. 30m. 24s.
Equa. time.....	3m. 46s.
Local mean time.....	7h. 26m. 38s.
Chronometer time.....	12h. 10m. 05s.
Chronometer slow.....	13m. 34s.
Greenwich mean time....	12h. 23m. 39s.
Local mean time.....	7h. 26m. 38s.
Longitude in time.....	4h. 57m. 01s.
Longitude	74° 15′ 15″ W.
Greenwich Sid. time.....	15h. 42m. 14s.
R. A. M. or local Sid. T..	10h. 45m. 13s.
Longitude in time.....	4h. 57m. 01s.
Longitude	74° 15′ 15″ W.

On May 12, 1911, in Lat. 38° 40′ N., Long. 74° 15′ W. at 8:10 p. m. The observed altitude of Arcturus was 49° 54′ to the east of the meridian. Declination 19° 39′ N.

Obs. altitude....	49° 54′		
Ref. and dip....	— 05′		
True altitude....	49° 49′		
Latitude	38° 40′	secant	.10746
Polar dist.....	70° 21′	cosecant	.02606
	2)158° 50′		
Half sum	79° 25′	cosine	9.26403
	49° 49		
Remainder	29° 36′	sine	9.69368
			2)19.09123
Hour angle.....2h. 44m. 31s. =			9.54561

Greenwich mean time....	13h. 05m. 34s.
R. A. M. S.....	3h. 18m. 35s.
G. Sid. time.....	16h. 24m. 09s.
R. A. star.....	14h. 11m. 38s.
G. H. A.....	2h. 12m. 31s.
Star's H. A.....	2h. 44m. 31s.
Longitude in time.....	4h. 57m. 02s.
Longitude	74° 15′ 30″ W.

R. A. star.....	14h. 11m. 38s.
Hour angle.....	2h. 44m. 31s.
R. A. meridian.....	11h. 27m. 07s.
R. A. sun.....	3h. 14m. 49s.
Local applied time.....	8h. 12m. 18s.
Equa. time.....	3m. 46s.
Local mean time.....	8h. 08m. 32s.
Chronometer time.....	12h. 52m. 00s.
Chronometer slow.....	13m. 34s.
Greenwich mean time....	13h. 05m. 34s.
Local mean time.....	8h. 08m. 32s.
Longitude in time.....	4h. 57m. 02s.
Longitude	74° 15′ 30″ W.
Greenwich Sid. time.....	16h. 24m. 09s.
Local Sid. time.....	11h. 27m. 07s.
Longitude in time.....	4h. 57m. 02s.
Longitude	74° 15′ 30″ W.

From the above examples it will be seen that star sights are not intricate or difficult. The hardest part of this method of finding latitude and longitude is in getting a good horizon and in being able to locate the star with the sextant. The latter will become easier, however, with practice.

An April Cruise from Buzzard's Bay to City Island

By F. H. NEWTON

THE crew of the Buzzard's Bay 30-footer Zingara was aboard the Fall River liner Priscilla as she paddled out into the river on Thursday evening, April 20, bound for Fairhaven to bring her west to City Island, her new home port. Having purchased the boat the previous winter, the new owners were naturally anxious to get her in home waters as soon as possible, and lost no time after the snow was off the ground in rounding up a crew to go around to Buzzard's Bay, where she had wintered, to get her.

The wind was fresh out of the northwest, and spring had discouraged winter so slightly up to this time that each member of the crew, although claiming much enthusiasm, was thoughtfully provided with a heavy overcoat and other wearing apparel of severe weather nature.

There were six in the party—namely, Frank and Fred Newton, W. H. ("Bill") Yule, Jack Bruns, "Rudy" Wiesker and McShane—just the right sized crew to handle the 46-foot-overall sloop if any hard weather was encountered.

We had given no little attention to the details of the cruise, and, as Capt. Cromwell, with whom Zingara had been laid up, promised that the yacht would be ready for immediate sailing upon our arrival, we expected to make a quick getaway. It was a glorious morning when we arrived at Fall River, but no calendar was necessary to inform one that it was early in the season, and before we were far on the way to New Bedford it would have been perfectly proper to question whether it was early spring or early winter, as there was easily sufficient snow (a recent fall) for good sleighing.

ZINGARA.

Rudy and Bill were delegated to get provisions in New Bedford, while the others continued on to Fair Haven, a mile east across the harbor. We easily made out Zingara from the bridge on the way over, less than a half-mile down the harbor, with absence flag flying. As the sun had the snow on the run and the harbor was thoroughly ice-free, we looked farther seaward over the blue expanse, that was stirred a bit by an off-shore breeze, and felt the call of the game and knew we were yachtsmen yet.

Bill and Rudy had purchased all the galley stores they could induce the grocer to part with, we judged, when they reached the yard, as they did when we were ready to put the material aboard. Capt. Cromwell's man had just succeeded in getting the winter stuff off the deck, excepting a few splinters of ice, as we

brought a large piece alongside for the ice box. Why that ice was put aboard has never been explained. Surely no yacht ever left anchorage with more unnecessary cargo than that hundred pounds of frozen water!

It was exactly 10 a. m. as we stood down the harbor with a light breeze astern and yelled good-bye to the good captain. He had volunteered the prophecy that we would be at City Island about noon the next day, and, although we had listened to him fondly and agreed with him gladly when he had waxed eloquent about the beauty and capability of Zingara, we now felt inclined to tell him to get a gag for it.

Our course down the bay lay south half east, and the wind, being north, was free enough for spinnaker, but we contented ourselves with full mainsail and let jib and staysail flop, while we went over the 46½ feet of the yacht's deck length to the last inch and found nothing to criticise. The light-weather start was much to our liking; for, although we had made careful inspection of all essential features below and aloft while yet at anchor, it was our initial effort aboard Zingara, and it was admitted there might be something to learn. At 10:35 we were holding same course, headed for Dumpling Light, with Butler's Flat Light bearing west by south. Here we put out the log. Everybody seemed to be in proper attune except Mac, who was lying on the deck facing the sun, either complaining of his throat or saying nothing.

The Dumpling Light bore N. W. at 11:35, and the log read 4.2 knots. The wind, now out of the northwest, had freshened nicely, so that we wet the lee rail slightly. The wind kept on working through the west until at 12 noon we had it S. W. and breezing quite decently, but couldn't lay our course, which was now W. ½ S. At this point the wind deserted, and for about an hour we had hardly steerage way. However, at 2:10, with the log showing 10½ knots, the Hen and Chickens Lightship was bearing N. W. about one-half mile distant, and we were laying our course nicely, one point S. of W., with the wind south.

The wind ruled light and for a while held true, but gradually worked to the south, until at 5 o'clock, when we had Brenton Reef Lightship about 4 knots off our starboard beam, it was S. ½ W. The log here indicated 29¼ knots. Mac had some time since taken to his bunk, complaining of headache and bad throat, and we did all that was possible—i. e., left him undisturbed and gave him much sympathy.

The steamer Richard Peck, no passengers, came out from Newport bound west, and passed us at 6:30 about one-half mile off Point Judith. She had a new coat of bright red bottom paint, but showed last season's whitewash above. The sun, showing dimly in a clouding sky, was nearly through work above our horizon, and, as there was nothing in sight but the Peck and Zingara, we looked for a bit of friendliness and listened for a salute. She gave us three healthy blasts, and Rudy replied in the best manner possible with fog-horn.

The wind had increased some at 7, and we were laying our course finely W. by S. The log at this point showed 40¼ knots. The crew—there was no captain or mate—was divided into two watches—Frank, John and Mac starboard, and Fred, Bill and Rudy port.

The former watch turned in at 8 p. m.—that is, Frank and John did. Poor Mac had beaten them to it many hours, and, to all appearances, had slept ever since.

The course was still W. ½ S. and the breeze had weakened so during the last hour that we had only added 3 knots to the log.

The sky became more and more clouded, but we wouldn't expect rain until all of the stars were blotted out, and many were yet visible. At 10:40 we had Montauk Point's revolving light bearing south 10 miles distant and Watch Hill's fixed signal 3 miles to the north. The breeze had pulled more to the east, and was now dead aft and much fresher; but John and Frank cared naught for breezes, east or fresh. They slept soundly, and at times snored, covered with much wearing apparel and many blankets.

The starboard watch's four hours below were all slept away at midnight, and John and Frank were called on deck again. The port watch remained on deck until we were well clear of Little Gull Island, as the boys were somewhat concerned for fear we might be running in too close. We couldn't bear off without jibing, and, as we were sailing the compass course correctly, we took a wee chance rather than come about and stand away. Anyone having sailed under similar conditions knows full well the difficulty of judging distances with satisfying accuracy.

The port watch went below at 12:40, when the log showed 68.3 knots. We held a course W. ½ N. and passed Cornfield Light Vessel about 3 knots off our starboard beam at 2 a. m., at which point the log registered 79 knots, and the port watch slept soundly.

We had difficulty in keeping warm; so much so, in fact, that we were compelled to remain cold, although clothed heavily enough to accompany Dr. Cook to Copenhagen. We wore winter overcoats over oilers, coats, sweaters and heavy shirts, with hip rubber boots, thick woolen socks—some of us two pairs—and heavy lined gloves.

Faulkner Island Light was flashing due north about 5 miles away at 3:35; the log showed 87.3 knots, and we were doing 8. Their strong love for the game denied more sleep to the watch below, and a few minutes later all of us were on deck but Mac.

Daybreak showed a heavily clouded gray sky and a real robust sea running, which, with a holding wind, gave positive promise of becoming quite gay and boisterous.

We had been observing conditions in unison for some little time, and agreed at just 6:45, when about 2 miles off Herod's Point, on shortening sail. At almost the same instant the weather grew much heavier, and the Sound was now rolling up the biggest seas it had ever shown us. We decided to tie two reefs in the mainsail, house the jib and carry staysail.

Bill shook her up into the wind while we lowered mainsail enough to shorten, and Frank took the first bath of the season making the jib fast out on the bowsprit, which the otherwise good yacht ducked a foot or more into each succeeding sea. As the yacht continued to plunge her head into them, he was cautioned to hang on, which suggested that old tale told of one who broke through the ice and was advised to keep cool while a rescuer worked out to him.

Fred served strong coffee, with enough food on the side to call it breakfast at 7:45, as we looked at Stratford Shoal Light, about 3 knots astern. At 8:45 a. m. the wind was still increasing, and we judged it was hitting it up to 40 miles. The log here showed us 128 knots. We were about 2 miles off Green's Ledge Light at 9:08, and from there on to Execution the high-climbing rollers raced after our stern most persistently. A leading wind of such character, of course, gave us a very satisfactory run, but it was so dead aft that we could carry no sail forward of the mast, and as often as the rudder would lift clear of the water as the big waves rolled forward her head would swing considerably, making a jibe possible unless carefully watched and steered.

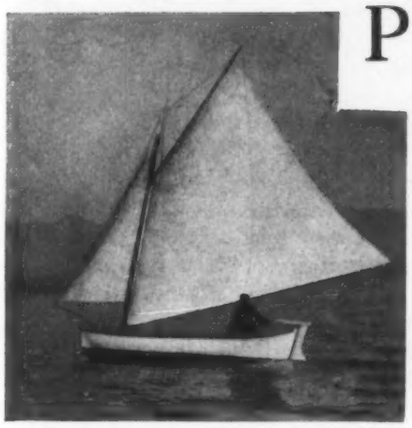
It was hard sailing—hard on both muscles and nerves—and we relieved one another in regular order at intervals of half an hour.

We passed Belden Point, City Island, at 11:47, with 153 knots recorded on log, and came to anchor a few minutes later off the club-house of the Harlem Yacht Club.

We had made the run from Butler's Flat Light to Belden Point in 25 hours and 12 minutes, which, considering the light winds at the start, was a highly satisfactory passage, and demonstrated the ability of the boat to travel. From Cornfield Light Vessel to City Island, 74 knots by the log, the time was 9 hours and 47 minutes, or at the average rate of about 7¾ knots an hour.

Cruising in an Open Boat

By G. B. WARREN



WYVERN.

PICTURE a tide-ripped sea, the short green rollers rearing their backs and tripping here and there in snow drifts of foam as they feel the check of a swift tide. Three yachts are beating seaward on the 7-knot ebb which pours out of Burrard Inlet to meet the rollers of the Gulf of Georgia. Two 35-foot yawls, with sharp spoon bows lifting gracefully to the heave of the sea, plunge down to meet the next steep wave, piercing it with their bowsprits, while a smother of white buries them to the mainmast. Then, flinging aside the spray streaming in ribbons of silver from bowsprit and scuppers, they triumphantly emerge to greet the next comber. The other craft is a 25-foot Columbia River sloop, a double-ender. A high-backed wave sweeps under her and her forefoot lifts, as if to bridge the narrow valley of the seas. She hangs for an instant undecided, then plunges down into the shadow of the 5-foot tide-rip roller, from which it seems there was no space to rise. With a yeasty smother of foam she strikes its base; then, with almost incredible swiftness of recovery, mounts lightly as a duck. A few drifting flecks of foam fly over abaft the chain plates, but nothing even wets the deck at the bow. That boat was Wyvern.

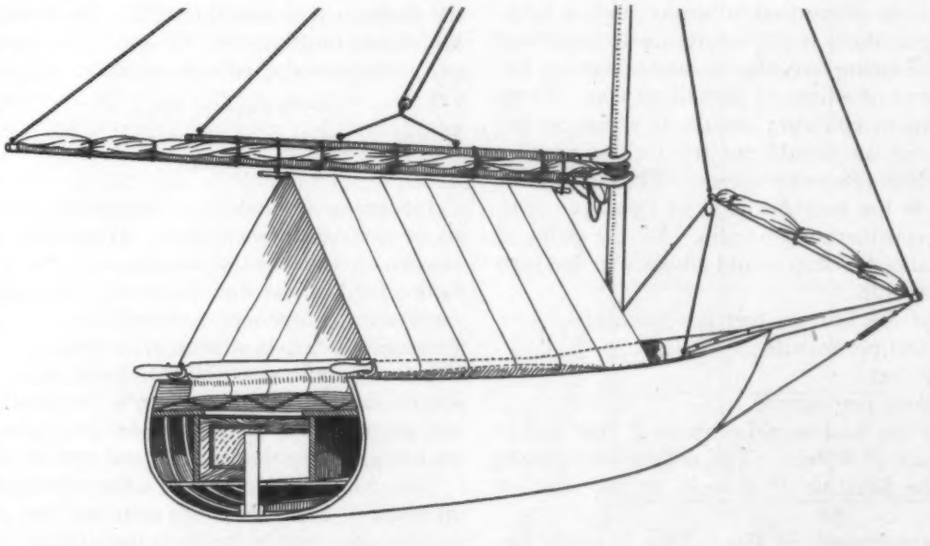
Built originally as a salmon fishing boat, she graduated into the leisure class several years ago, and proved an efficient little cruiser and a roomy boat for day sailing. Several alterations which suggested themselves have improved her windward work considerably, this being the one weak point of these boats, which, running and reaching, keep fast company. With increased centerboard surface and a high-peaked sail plan, consisting of jib and mainsail, Wyvern works well on any point of sailing, and has carried her crew in comfort and safety on many pleasant and strenuous cruises up the Gulf of Georgia from Vancouver, B.C., and on the nearby sounds and inlets. Her comparatively large sail area of 385 square feet in the working sails, besides spinnaker and balloon jib, saved much work at the man-power auxiliary—viz., the oars and a scull over the stern—in light weather. In heavy weather, with a single reef in the mainsail and the jib stowed, she handles as easily as a catboat.

For a shelter at night and in wet weather a 10 x 12-foot tent has given good sleeping accommodation and protection from inclement weather while at anchor. This tent we pitched under the main boom, with the spinnaker boom for a ridgepole and the tent ropes carried around oars laid in the after rowlock, one on either side, and fastened to the shroud. The ends of the ropes are then brought back over the coaming and made fast to a stringer running along the ribs inside the boat. The tent flaps are laced around the mast and running rigging and made fast at the heel of the bowsprit. The throat and peak are then sweated up till the tent is stretched tight. The main sheet is finally belayed, to fix the boom firmly amidships. The tent rigged in this way sheds the rain on the deck outside the coaming and gives full headroom amidships from the mast to a point abaft the after thwart. A bulkhead at each end of the centerboard box encloses the sleeping quarters. In the compartment forward of this are the spare ends of the halyards, anchor rope, and a box or two of provisions, while lanterns, oil stoves, coal oil and spare gear are stowed under the forward deck. In the stern a 35-pound spare anchor and chain is stowed and fresh water carried in a couple of large earthenware jars.

The general dimensions of Wyvern are: Length over all, 25 feet; length waterline, 24 feet 3 inches; beam, 7 feet 8 inches. She has a plumb stem, and is double-ended, with wooden centerboard. Her bow is fine on the waterline, but flares sharply at the deck, the stern being similar, making the boat very dry going to windward or running in a seaway, but tending to check her by pounding in a short lop. Her floor is almost flat, and she has good power in her bilges, though they are not hard. She has considerable sheer, with a low freeboard amidships. A wash board and coaming run aft from the half deck at the bow. This is the type of Columbia River fishing boats.

When I gave her a new sail plan with slight increase in area and height, I found the ordinary fishing centerboard, which only comes up to the level of the thwarts, inadequate to hold her up to the wind, so added a piece 18 inches deep at the after end, running to nothing forward. The board, which formerly drew 3 feet 6 inches when down, now had its draft increased to 5 feet, which enables her to lay much closer to the wind and reduces leeway to a mere trifle. The board, when hauled up, now comes a foot and a half above the box, necessitating leaving the top of the box open, which has, however, proved no inconvenience. The ballast consists of 600 pounds of pig-iron, and is pretty well dis-

(Cont. on page 70.)



HOW THE SLEEPING TENT WAS SET.

The Resistance, Propulsion and Powering of Motor Boats

By LAWRENCE B. CHAPMAN

Junior Member of Society of Naval Architects and Marine Engineers

PART II—SCREW PROPULSION AND POWERING

HAVING discussed resistance, or tow-line pull, we now come to the problem of propulsion of a boat driven by internal power. The problem of propulsion is a very complicated one, and there are so many factors entering into it that one is likely to get hopelessly confused unless he gets the fundamental principles in mind at the outset.

First of all, we should understand the true action of the propeller. A great many yachtsmen look upon the action of a propeller as a screw working in a nut, and believe that the propeller actually screws its way through the water and thus drives the boat forward. This is entirely wrong, although this conception is made use of in determining the slip.

The true action of a propeller is a pumping action, and the problem of screw propulsion depends on the well-known law of mechanics: "For every action there is an equal reaction." The propeller, as it were, pumps the water astern and the reaction drives the boat ahead. This may be seen in the action of a fire hose, where it requires several men to hold the nozzle because of the reaction of the stream of water. This reaction is known as the thrust, and is taken up on the thrust bearings at the engine. This thrust is the same as the resistance or tow-line pull, which was taken up in the first part of this article. They would both be equal if it were not for certain actions of the propeller on the hull, to be treated later. The velocity of this stream forced astern from the propeller is somewhat greater than the speed of the ship. The difference between them is known as the slip, which will be fully explained a little later.

Many men think that a propeller working at a small slip is the most efficient, and that if they could reduce the slip to zero they would have the best possible propeller. This is a serious error, for zero slip means zero thrust, and with no thrust there can be no forward motion to the boat. To quote from the world's great authority on propellers, Froude: "To assert that a screw works with unusually little slip is to prove that it works with a large waste of power." So long as there is any resistance to overcome there is no possibility of reducing the slip to zero. Let us examine Fig 6, which is a curve of efficiency plotted on slip. From this we see that the maximum efficiency occurs at about 20 per cent. slip. We thus see that we should not try for too small a slip, but one at which the best efficiency occurs. This varies for different propellers and is in the neighborhood of 15-20 per cent.

Let us now turn to the consideration of slip. By the pitch of propeller we mean the distance the ship would advance in one turn of the screw if there was no slip.

Let V = speed of the boat in feet per minute;
S = slip in feet per minute;
P = pitch in feet;
R = revolutions per minute.

Then for one revolution the boat would advance P feet and in one minute it would advance $P\,R$ feet. The difference between $P\,R$ and the speed of the boat, or $P\,R - V$, is the slip; or $100\,\frac{P\,R - V}{P\,R}$ gives the per cent. of slip. This is easily figured for any boat if the speed, pitch and revolutions are known.

This slip is known as the apparent slip, and is complicated by the wake action. We saw in the first part of the article that the friction between the boat and the water gave a forward motion to the water astern of the boat. Thus, in the neighborhood of the propeller the water which the screw acts upon is not at rest, but has a forward motion of about one-tenth of the speed of the boat and the slip is thus decreased. Let us consider an example. Suppose the propeller of a certain boat had a slip of 80 feet per minute and the water following the boat, or the wake, had a speed of 50 feet per minute, we should have a slip by our formula of only 30 feet per minute. The 80-foot slip is what is known as the true slip, and the 30-foot slip is known as the apparent slip. Cases often arise where there is an excessive wake, making the apparent slip negative. The practical yachtsman has little use for wake and true slip, and the brief explanation given above is sufficient.

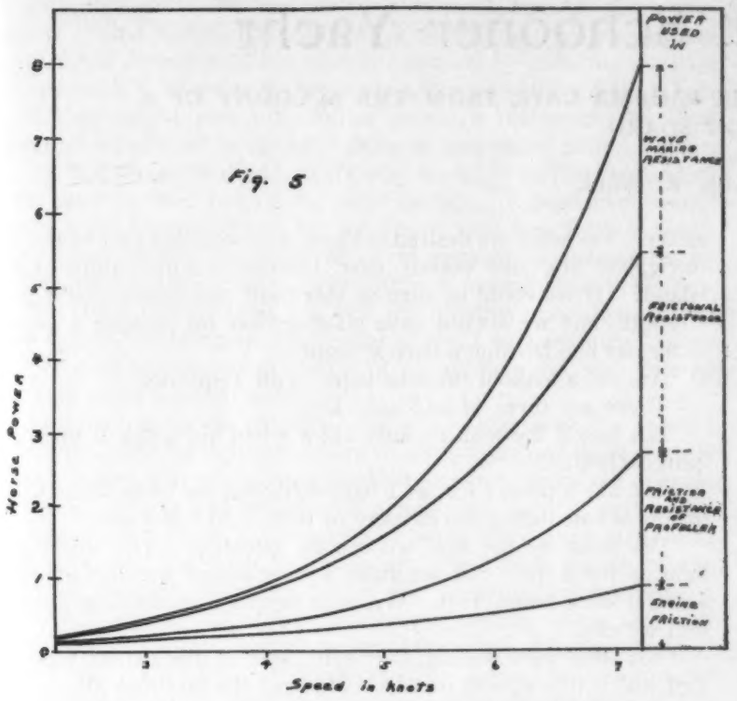
Let us, before going further, make brief mention of a further reaction of propeller and hull. Suppose for a certain boat that the resistance as found by towing at 7 knots was 350 pounds, we would expect from the foregoing explanations that the thrust on the propeller shaft at 7 knots would be 350 pounds. This is nearly true, but because of the sucking action of the propeller on the hull the boat is held back somewhat and it becomes necessary to exert more thrust to obtain the same speed. This extra thrust is known as "thrust deduction," and is often considerable in boats with full sterns. It can be overcome considerably by placing the propeller further away from the hull. It is obvious that the thrust expended in this way is lost work.

Up to this time we have been talking of thrust and resistance, while the average boatman talks only in power. We should have a clear conception of resistance by this time, and the step to power is an easy one. Power is merely resistance multiplied by the distance it moves through. To obtain power from resistance we should multiply the resistance in pounds by the speed in feet per minute and divide by 33,000; or, expressed as a formula,

$$\text{Power} = \frac{\text{Resistance} \times 101.3\,V}{33{,}000}$$ where V is the speed in knots.

Designing propellers is altogether too complicated a problem to be even mentioned here. If a yachtsman has a boat of any size he should always consult some naval architect to have him figure for him the dimensions of his propeller. To the men who understand propellers thoroughly it is a short job to obtain the dimensions, but if a man who does not thoroughly understand them tries to fit a propeller to his boat it generally ends in a miserable failure. To the owner of a small boat I would say, take the propeller the engine builder recommends for small boats, as he has generally found it a good one by experience.

The following table gives the maximum efficiency for values of pitch ÷ diameter. We thus see that for values of P/D about 1.5 the efficiency is the best, that a small wheel with a large pitch is better than a large wheel with small pitch.



P/D	Max. Efficiency Per Cent.
.6	58
.8	65
1.0	70
1.2	71½
1.4	74
1.5	74·3
1.6	74

Before closing this chapter on propulsion let me point out a few of the common errors and correct some of the common mistakes on this subject.

We often see propellers advertised that will increase the speed from two to three miles or reduce the power 10 per cent. to 20 per cent. Why shouldn't they? Hardly 10 per cent. of the motor boats afloat have the proper propellers, and why should not some new wheel be just as good or better than the old one? But if your boat seems to be doing well let it alone, and do not try to increase your speed with some different make of propeller, for it will probably end in less speed. For large boats with high power do not let the engine maker choose the propeller, for, as a rule, he knows very little about the theory of the question. A few dollars spent in having some naval architect give you your dimensions will, in the end, save you a lot of money. There is no need of having a propeller designed, but pick out the nearest to the required dimensions from some maker's catalogue. Some makers guarantee a very small slip for their propellers, which means a great loss of efficiency, and, consequently, a waste of power. Always bear in mind that for a propeller to work to the best advantage it must have from 10 per cent. to 20 per cent. slip. There are also many propellers designed with queer-shaped blades of extreme rake and increased pitch, which often appeal to the uninitiated. Experiments carried out with great care show that the efficiency depends but little on the shape of the blade and favors the elliptical blade slightly. Rake, increasing pitch and the like show no advantage whatever.

Another point worthy of mention is the blade area. The thrust of a propeller is not increased by increasing the blade area. Wide blades are no advantage whatever, except in cases where cavitation takes place, and, as a rule, show poorer efficiencies than narrow blades. Cases often arise where the revolutions of the engine are held down because of too wide blades. The standard width of 0.2 to 0.3 of the diameter is the best in all cases, except for screws turning at a high number of revolutions. When the tip speed of the propeller reaches a mile a minute (5,280 feet per minute) cavitation is likely to begin, and wide blades should then be used.

A good part of this chapter on propulsion has been correcting common notions of the screw propeller, but there are so many false conceptions and freak ideas that the best way of treating the subject seemed to be to straighten matters out.

We now come to the last part of the article—the question of power. Little can be said on this subject of any value. The power of a gas engine is very uncertain and can only be measured by a brake test, and few engines are rated at their actual power, some being way over, some way under. Then, too, the power depends on the number of revolutions, and generally the boat is so poorly fitted with a propeller that the engine does not do its best. A man buying an engine of over 10 horsepower should insist that the builder make a brake trial of it before he accepts it.

In the light of present knowledge, the best way to power a motor boat for a certain speed is to compare the boat in hand with some other boats of known power and speed. If the boat is of the high-speed type a model may be experimented with and the power determined in that way.

In selecting the engine for a given boat one should take care to have the proper revolutions for the speed desired. At low

(Continued on page 70.)

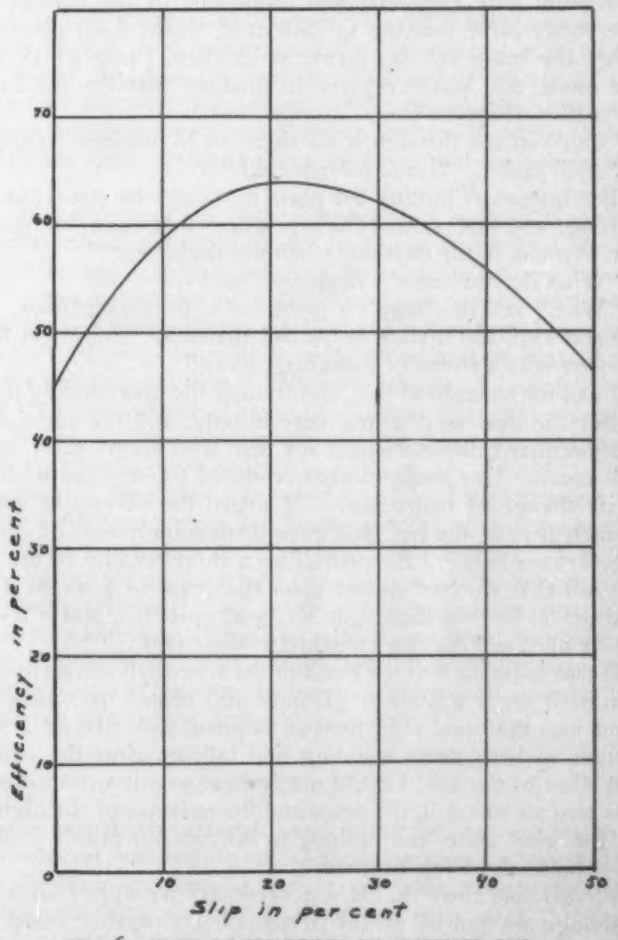


FIG. 6.—CURVE OF EFFICIENCY ON PROPELLER SLIP.

The Lady Maud, Schooner Yacht

A NARRATIVE OF HER LOSS ON ONE OF THE BAHAMA CAYS, FROM THE ACCOUNT OF A GUEST ON BOARD

By W. CLARK RUSSELL

CHAPTER XV

BY the time we had examined the contents of the box the sun was very low, the wind almost gone, the sea rapidly calming, and every promise of a fine bright night in the sky. After Hunter returned with the kettle from the well, he followed Tripshore down to the creek, where they buried the two bodies in the sand. Before they came back the sun had vanished and the night had closed upon the sea; but, happily for us, who were without artificial light, there was a bright moon in the southwest, which, though only half the orb was visible, flashed a silver glory upon the water, and was strong enough to give sharp black shadows to the trees.

When Tripshore returned he held out some object to me, which, on first viewing it in his hands, I had taken to be a piece of spar; but it proved to be one of the telescopes belonging to the Lady Maud, the one that had stood on brackets in the after companion. It had come ashore with the piece to which it was attached.

This was a grand discovery, though its most significant value did not immediately occur to me. All that I thought of was how useful it would be to search the horizon with and examine the coast which Mrs. Stretton was the first to see. I called to Sir Mordaunt that Tripshore had found one of the telescopes, and everybody came running to look at it, whilst I sat down to unscrew the lenses and dry them; which done, I pointed the glass at the moon, and was overjoyed to discover that the sea had done no injury whatever to it.

"Can you see through it all right, sir?" inquired Tripshore.

"Ay," said I. "Look for yourself."

But instead of putting the glass to his eye he stood like a man musing, and then said, "Can't ye guess a fine use for this glass, Mr. Walton, in the daytime, when the sky's clear?"

"What do you mean, Tripshore?" said I.

"Why," said he, "here's a toobe full o' burning-glasses. When the sun's up, you'll want no lucifer matches. You'll get fire and to spare with e'er one of them magnifiers."

I had not thought of this, and it made the glass doubly precious.

But the dew was falling very heavily, and the night air had that peculiar chilliness which any man who knows those latitudes will recall. Our damp clothes rendered us very sensitive to the swift change of temperature. I urged the women to withdraw to their part of the hut, and gave them some pieces of canvas to use for coverlets. I then rolled up a short breadth of the side of the sail that we had spread upon the grass to serve as a pillow and made Sir Mordaunt put his head upon it. Norie lay down beside him, and the dog crouched at their feet.

It was quite dark in the hut, but the white sail spread in the bottom of it made a kind of glimmer and helped us somewhat. I went into the open with the two seamen, and, though I was reluctant to keep them standing and talking after the sufferings and labor of the day, I could not forbear to call a council of them now that all was still, the peace and the radiance of the night upon us, the wind gone, and nothing to distract our minds from close contemplation of our position.

First, I told them that it was necessary we should keep watch. Although we had no means of signaling a passing vessel, yet it would be a thousand pities if one should pass when we were asleep. For what we desired to know was, was this part of the sea navigable, and did vessels ever traverse it within sight of the island? If we could be sure on this head, our hopes would gain strength, and we should have good reason for making a smoke in the day and burning a flare at night.

"Ay, sir, a lookout must be kept," said Tripshore.

"There are three of us," said I.

"But how'll the man on duty know when his watch is up?" inquired Hunter.

This was a poser; for, as I have told you, we were without the means of calculating the passage of time. At last I said:

"We must do the best we can by guessing. The moon will help us for a spell. If we make a three hours' watch, each man will get some hours' rest. We must reckon how the time goes as best we can."

They were very willing, they said; and so that matter was settled, and it was agreed that I should keep the first lookout.

"And now," said I, "how are we to get away from this island? Our stock of food is very small, though more may wash ashore. But let as much as may come, it will not last eight men and women long; and we're bound to starve if we stop here."

"There's only one thing to be done," said Hunter. "We must turn-to and build a raft—something that'll float—with a life-line around it and a mast. We must make the best job we can—something that'll steer—and one or two of us'll have to go adrift in it, and take our chance of bein' picked up and getting the vessel as picks us up to call for the others."

I shook my head. "If we could be sure that the land some of you have seen was inhabited, why, then, though it should be 50 miles distant, one or two of us, as you say, Hunter, might venture for it on a raft. But to risk our lives merely to be stranded on such another rock as this would be a mad thing. You'll get no raft to do more than swoosh along straight with the wind, and I see no good to come of going adrift, with the certain chance of being blown away to sea, and either foundering or dying of want."

"You're right, sir," said Tripshore, gravely. "A raft 'ud be sartin death, Tom."

"But it's sartin death if we stop here, too!" exclaimed Hunter. "Though a raft 'ud give us a poor chance, it 'ud still be a chance; but this blooming island gives us no chance at all."

"Why not rig up a raft—a dummy—a small 'un, with a mast and sail, and a board at the masthead wrote on to signify that there are eight shipwrecked persons aboard this island, and send it adrift, with the chance of some vessel overhauling it?" exclaimed Tripshore.

The idea was original and striking. I said at once:

"Yes, we can do that. It shall be our first job in the morning. With a bit or two of canvas set square on a well-stayed mast, a raft is bound to blow along; and if our chance lies in her being seen by a vessel, then she'll answer our purpose better than if she were manned, for she'll risk no lives."

Hunter turned his head, and, looking toward the beach, said, in a low voice: "Would it be a bad job to lash one of them dead bodies in the sand yonder to it? She'd make a likelier arrand for us with a body aboard than if she went naked. A ship 'ud stop if they sighted a body, but if they saw nothen on the raft maybe they'd pass on without heeding the board at the masthead."

The suggestion offended me for a moment, but only for a moment. What Hunter had said was perfectly true. A body on the raft would twenty-fold increase our chance, by inducing a vessel to approach it, whereas if the people of the vessel saw only a bare raft they might pass on. What would it matter to the dead whether he was left in the sand there or sent adrift to find a grave in the bottom of the deep? Life was dearer to us than sentiment. We must be succored or we must perish. A dead man would make a ghastly messenger, but we should send him forth in God's name; and whether he should be swept away or be encountered by a ship, he was sure of ultimately finding a resting-place in the sea.

We stood talking briskly a full ten minutes over this scheme, and then, there being nothing more to say, I told the men to turn in, but first to take a sup of sherry. This they did, and entered the hut, and I was left alone.

As I had foreseen, the wind had died away with the sun. I could feel only the lightest current of air. Here and there a white cloud floated, scarcely moving athwart the stars, and some of them carrying delicate and phantom-like rainbows in the parts they turned to the moon. Some of the stars were very large and beautiful, and the deep, unspeakable, velvet-dark depths of the heavens seemed tremulous with the incessant showering of meteors. There was still a heavy swell rolling along the path of the vanished gale, and as these majestic and foamless coils of ebony water passed under the moon they flashed into mountains of quicksilver. The reef hindered the run of these rollers on our side of the island, but there was surf enough along the beach to fill the night with a most lamentable moaning noise. It was as though the sea in mockery gave our misery a voice. It was a most depressing sound to stand and idly listen to, and cruelly brought home to me our desolate condition, and our lonely and helpless plight in the midst of this dark water, with its sullen rollers and its lamenting voice wailing close at our ears.

As I looked at the moon and the peaceful sky, I thought with bitterness that had such a night as this come to us twenty-four hours sooner the Lady Maud would still have been afloat. I pictured how her decks would have shown, and imagined Lady Brookes in her invalid's chair near the skylight, and Ada Tuke flitting from one side of the deck to the other in the moonlight, and Sir Mordaunt pacing to and fro. I say, I stood dreaming forth a whole picture of the schooner as she would have appeared on such a night as this, until I broke away with a shudder from the dreadful contrast of our position and walked down to the beach, in the hope of distracting my mind in a hunt after more relics of the wreck.

The tide was lower by many feet down the beach, and though I could not see the reef on which the yacht had struck, yet I guessed, by the play of white water there, that when the sea was calm, at low tide, the reef would be visible. There was a dark object almost abreast of the hut upon the gleaming coral sand, and, on approaching it, I discovered it to be a full cask, but what it contained I could not tell. There could be no doubt, however, from its appearance, that it held provisions of some sort. So I set to work to clear away the sand that buried it by about a foot and a half, and, tumbling it on its bilge, I managed to roll it some distance above high-water mark, where it would be safe from the sea.

I returned again close to the surf, and slowly followed the line of it as it trended away to the northeast and then into the southeast, where it terminated in the bight of the limb of land. The moon shone brilliantly, and I could see very plainly. A little further on was a pile of fragments of timber high and dry; and just beyond again was a spare foretopmast and the yacht's foretopgallant and topsail yards, the sails bent and the gaskets holding tight. These, it will be remembered, had been sent down during the gale. I thought that we might come to require those spars, but they were too heavy for me to drag up the beach; so, after having carried a quantity of timber up the shore, I went to the trees where the hut stood, and hauled in the line by which Sir Mordaunt and the others had been dragged from the yacht, and which had parted close to the vessel when she went to pieces. With this end of stuff I returned to the spars, hitched the line round them, and made the end fast up the beach, so that the tide should not carry them away.

All this was very hard work, but not to be neglected. I was tired, and was going to sit down, when I spied a dead body on the sand about 50 yards this side of where the beach terminated in the creek. It lay on its back, with its arms out, and its head on its right shoulder, in the very posture of a crucified figure. I recognized it as a man named Martin Jewell, a young man, in life fresh-faced and smiling, and a very willing sailor. He looked to be asleep, so easy was the appearance of his face in the moonlight, though his eyes were open. I know not why his quiet look should have made me think this dead man frightful; but I should have been less shocked and scared had he presented the usual dreadful appearance of the drowned. Maybe it was my knowing him to be stone-dead, and his looking life-like and sleeping, that made me recoil and tremble. And you must add the surroundings, too: the breezeless atmosphere, the moaning of the sea, the steady white fires of the moon upon the water, the swell sparkling like silver as it ran across the wake of the orb, the large stars looking down, with the shining dust of meteors quivering and fading among them. I say figure this scene, and then think of the stirless dead body, lying like a dreaming man, looking straight up at the sky, as though he followed the flight of his spirit.

I shook off the feelings which possessed me, and, fetching a piece of jagged plank from the pile beyond, dug a hole in the sand; but when I tried to put down the outstretched arms of the body I found they would not yield. So I had to dig afresh and turn out two grooves, if I may so say, to receive the arms; and then I laid him in his grave, in the very position in which he had died, with his arms stretched above his head, and so covered him over.

This miserable and sad duty discharged, I walked languidly toward the hillock, meaning to rest on top of it, where I should command the sea. Having reached the summit, I threw myself down and ran my eye over the sea; but though there had been a ship a mile off in the south or west, I believe I should not have seen her, owing to the confusing light of the moon and the play of the swell that perplexed the eye with alternations of radiance and shadow. I carefully looked along the horizon, but could see nothing but the sea and the stars in the north and east and the flashing moonlight in the other quarters.

So passed the time until I believed my three hours expired. I then went softly into the hut, but had to gently feel over the bodies of the sleepers before I could distinguish Tripshore. I shook him, and he started up, on which I instantly spoke to him, that he might recollect himself, and went to the moonlight where he could see me; and then telling him what I had done, and bidding him keep a lookout for ships and to seek for any wreckage that might be serviceable to us on the beach, I laid myself down in his place and fell into a deep sleep.

CHAPTER XVI

I AWOKE very much refreshed, and found the sunshine pouring strongly into the hut and myself alone. I got up and went out, and saw Sir Mordaunt leaning against one of the trees to the right of the hut, watching the rest of the party, who were variously employed about the beach. We shook hands warmly, and I asked

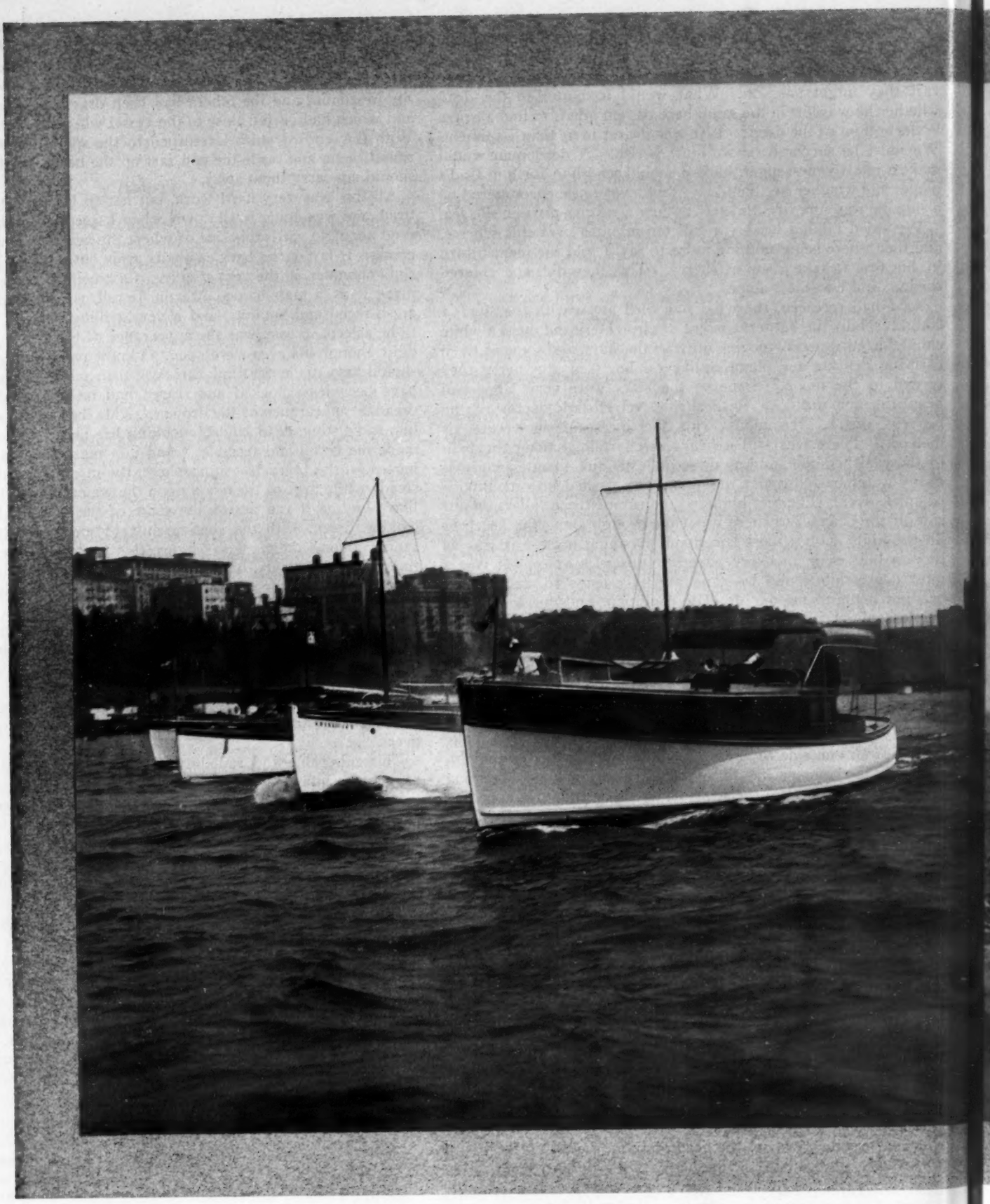
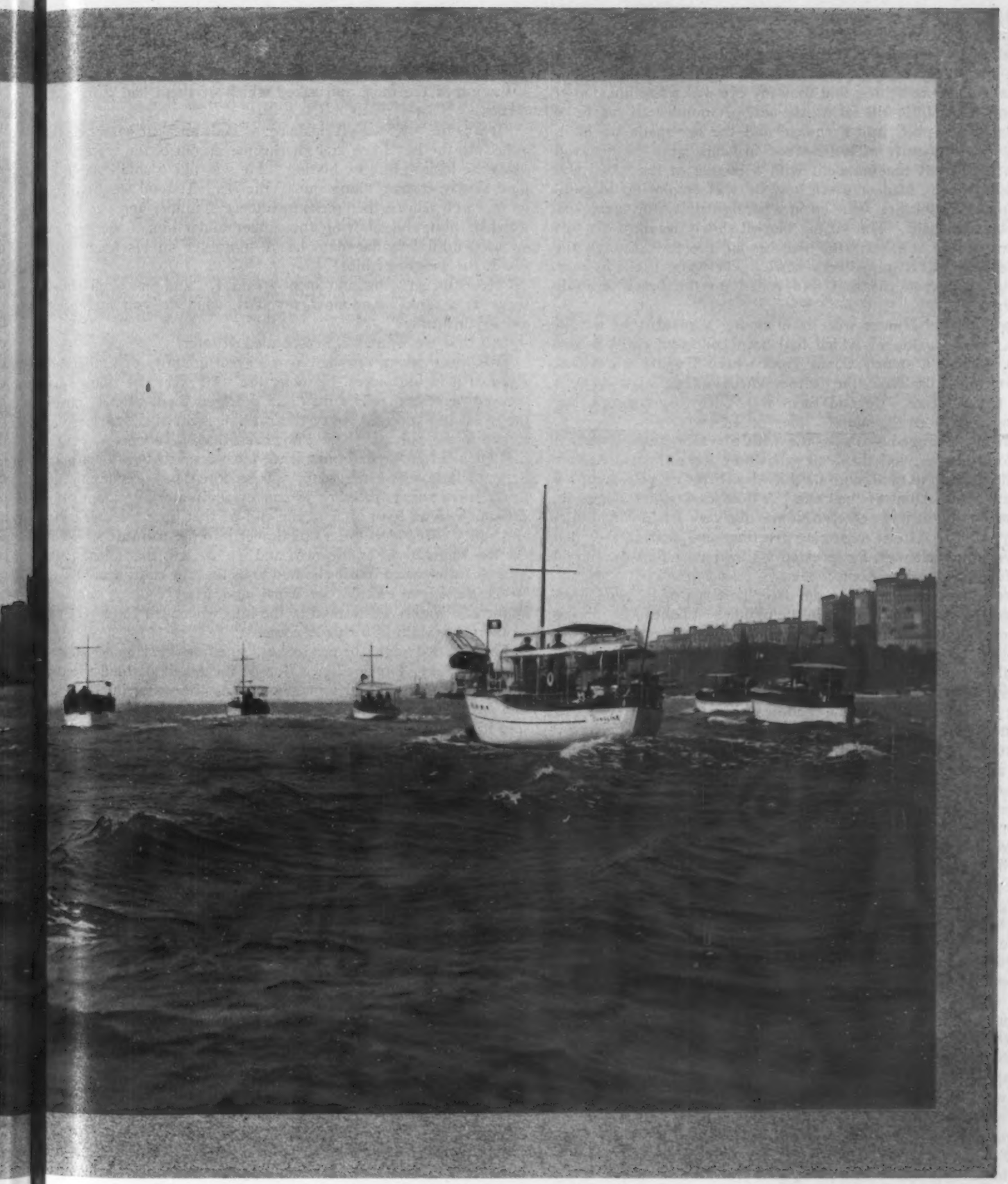


Photo by F. A. Walter.

READY FOR THE GUN.

OPENING RACES OF THE SEASON OF



THEY'RE OFF!

OF [illegible] YACHT CLUB ON THE HUDSON RIVER.

him how he did. He told me that he had slept well, and felt heartier, and he certainly looked so.

I judged by the sun that the morning was not far advanced, for which I was very thankful, as there was a great deal to be done that day. The first thing that took my eye was a fire burning at the foot of the little hill facing the sea. A number of pieces of rock had been piled into a square and the fire made up in it. There was a quantity of brush-wood in heaps near the fire, and Norie, coming at that moment with a bundle of the wood and flinging it down, made me see how he was employing himself. The smoke of the fire went up in a straight line, for there was not a breath of air. The sea lay like oil slowly waving. It was of a most deep and beautiful blue beyond the reef, though the cloudless sky was a light silvery azure. The water broke in long, flashing ripples on the reef and rolled up the beach in little breakers.

Tripshore and Hunter were busy among a quantity of wreckage, a good portion of which had been collected whilst I was asleep. About a stone's throw from where I stood were Mrs. Stretton and Ada Tuke, the former kneeling, but what doing I could not perceive. Beyond them was Carey, spreading some wearing apparel in the sun.

Having exchanged a few words with Sir Mordaunt, I walked over to the ladies, and then saw what they were about. A deck plank lay upon the sand, and upon it Mrs. Stretton was chopping up some beef fat out of the cask. A flour cask stood alongside, and, on looking at it, I perceived it was the cask I had found during my watch. After exchanging greetings and hearing they had slept well and felt well, I expressed my happiness that we should have found the cask of flour.

"The salt water has got to the outer portions of it," said Mrs. Stretton; "but the flour is dry in the middle. I believe by mixing both parts and kneading them well with fresh water we shall not notice the salt when we have baked them in cakes with this fat."

I called to Tripshore to tell me where the telescope was and ascended the hill with it. The moment I pointed it in the quarter where the others had seen the shadow on the preceding day I saw the land; but I could make nothing of it beyond observing that it was full twenty miles distant, and either a mere rock or else a hill on an island, the lower portions of which were invisible. I carefully searched the rest of the horizon, but could discover nothing, and came back again to the point of land. I struggled with my memory to fashion a mental picture of the Bahamas. My having studied the chart so closely on board the yacht helped me a great deal; but although I figured all the larger islands, such as Abaco, San Salvador, Eleuthera, and the islands as low as the Caicos Passage, yet I could not even faintly recall the bearings of the islets and cays. Nor indeed would it have served me had I been able to do so; for I had no idea of our latitude and longitude, and no means of determining our position. Yet in spite of this I kept on conjecturing and wondering, and asking myself if that land could really be one of the greater and inhabited islands, and whether in that hope it would be wise to venture for it on a raft.

But the idea of a raft recalled our project of the preceding night—a good idea, it seemed to me, and full of promise. So I shut up the glass and joined Tripshore and Hunter, who, as I have said, were at work among the wreckage, selecting wood for the raft. As I advanced toward them I caught sight of a strange-looking object, resembling a big capsized tub, about 50 yards away, in the direction of the wreck. I went to see what it was, and, to my astonishment and delight, found it a great turtle, weighing, as I should have supposed from the appearance of it, not less than 400 pounds. It was on its back, and alive. I was thunder-struck at first, and then filled with joy. This, to be sure, was one of the months in which the turtle on calm moonlight nights comes up the shore and lays its eggs in the sand. I might fairly suppose that since one was here others were about, so that the idea of our perishing for want of food need no longer haunt me.

I rejoined the men, and asked which of them had caught the turtle.

"It was me, sir," says Tripshore. "Half an hour after you had gone into the hut I see that chap come up out o' the water. He made me look at him by hissing. He was like a small steam engine slowly coming along out o' the sea. I stood stock-still till he was well ashore, then picks up a piece o' timber and gets to leeward of him, and, shoving the timber under him, I worked and sweated until I managed to heave him over on his back. But, Lord! the weight of him!"

"He's full of soup and meat," said I, "and his shell should serve as a tank. And now, my lads, what do you find handy among this raffle?"

"All that we want, sir," responded Hunter.

This was evident, for there was a great quantity of timber, and some of it in big pieces. Among the stuff were the spars I had secured overnight. The men had dragged them ashore, unbent the sails and snugged away the running gear that had been attached to the canvas. I saw, however, that if we were to get our raft afloat after we had built it we must construct it down in the bight of land where the water was smooth; and, explaining this to the men, we set to work to convey the material to that place. This took us an hour; but at the end of that time we had lashed and nailed three large pieces of timber into the form of a triangle for the foundations of the raft, and we had got this afloat in the smooth water when Norie shouted to us that the cakes were baked.

We thereupon quitted our work, and, after cooling our faces in the salt water, we walked to the hut, where we found the rest of the party waiting for us to come.

There stood eight brown cakes, smelling very good indeed, upon a plank. I opened two tins of meat and divided the contents. We then poured some sherry into the water in the kettle, and breakfast was ready. But first Sir Mordaunt asked us to join him in a prayer, which was the wish of us all; so we knelt, whilst he prayed aloud, putting up such a petition as I need not repeat the language of, though any man who can imagine himself in our situation will understand its character.

This done, we fell to our repast, the dog getting his bit of salt meat, as usual. I praised the cakes highly. To be sure, they were a bit salt, but not disagreeably so.

"Pity some tobacco don't come ashore, sir," said Tripshore, with a languishing look at the sea.

That was my want, too. One of the hardships of those hard times was the being without tobacco. I sat next to Sir Mordaunt, and whilst we were breakfasting he asked me what scheme I and the seamen were carrying out. I told him what our idea was, and he and the others seemed greatly struck by it.

"It's a fine notion," said Norie. "There's every chance of the raft being sighted. Can you carve letters upon wood, Walton?"

"I have never tried," said I. "But I dare say I can."

"Let me have that job," he exclaimed. "Tell me what to say, and after breakfast I'll set to work."

I proposed an inscription, and asked if it would do. There was a short debate, but nobody seemed able to improve upon it, and so my suggestion was adopted. Norie drew a pencil from his pocket and scribbled down the words on the deck plank. I then, in a low voice, told Sir Mordaunt that we meant to lash a dead body to the raft, and explained our reason. The idea shocked him, just as it had shocked me, but his judgment promptly appreciated the value of the scheme.

"We'll say nothing to the women about that part," said I.

"They must be drawn aside whilst we make the body fast."

"But they will see it as the raft floats away," said he.

"Why, perhaps they will," I answered; "but distance will soften the horror."

I have said that we had already laid the foundations of the raft in the form of a triangle. I recommended this shape because it gave a kind of bows to the raft, and I believed that by affixing a broad plank of wood as an immovable rudder at the broad end the thing would blow along steadily. We had plenty of nails and spikes, and the frame of the raft being afloat, we soon decked it. Of course, the work was exceedingly rough, but that we cared nothing about, providing we made it strong enough to hold. The raft being completed, we set to work to rig her. We took the yacht's foretopgallant yard and securely nailed to it the best and lightest piece of stuff we could come at to serve as a yard. To this we bent the topgallant sail, and all three of us buckling to it, stepped the yard that was to serve as a mast into a crevice in the middle of the raft, where we securely wedged and then stayed it.

Although this description may run glibly, the job was a hard one, because our tools were few and little to the purpose. The morning passed quickly whilst we were at work, and in the middle of it a pleasant breeze sprang up in the northwest and kept the sea shivering, as though the sunlight flashed in a mighty field of diamonds. It carried the smoke of the fire across the water in steel-blue coils, which looked to be leagues long, and which I was forever breaking off my work to glance at.

We had scarcely set the mast up on the raft and secured it when Norie, accompanied by Miss Tuke, came down to us carrying a piece of deck plank.

"Here's the inscription," said he, looking well pleased with his work; and he put the board down on the sand that we might see it. The letters were bold, well cut, and each as long as my thumb. The inscription ran thus:

"JULY ——, 18——. 'LADY MAUD' WRECKED ON A BAHAMA CAY. EIGHT SURVIVORS. SAVE US."

There were a great many letters in this, and I was astonished at the rapidity and accuracy with which they had been carved.

"It would have taken me two days," I said, "and then perhaps no one would be able to read it."

I gave the board to Tripshore, who nailed it at the masthead by standing on Hunter's shoulders.

"Why couldn't you build a raft big enough to carry us all away, Mr. Walton?" said Miss Tuke.

"We mustn't venture it yet," I replied. "Nothing but the certainty of perishing here should make us face the peril of going afloat on a raft."

"But is it likely," said she, "that we should be on the water long without meeting a ship?"

"Ah!" I replied, "if I could foretell that, I should know what to do."

"We cannot go on stopping here," she exclaimed, piteously, clasping her hands.

"No, and we don't intend to stop," said I. "Look at the fire signal that smoke is making as it stretches across the ocean. Who knows but that at this very moment it may be seen and help coming? And see that message," I added, pointing to the board the men were affixing to the masthead of the raft, "which will shortly be afloat, and which, for all we can tell, may be the means of delivering us from this island before another day is passed. Don't lose heart," said I, tenderly, taking her hand and looking earnestly at her. "Your courage has been our mainstay all through. Don't fail us when we most want you."

She colored up a little and averted her face, but made no reply. I beckoned to Norie, and, drawing him aside, told him in a few words what we were about to do, and begged him to go to Sir Mordaunt and ask him to draw the women into the hut, or keep them apart from us and out of sight until we had done. He walked off, and in a minute or two Sir Mordaunt called Miss Tuke, who left us. Presently I saw the baronet, leaning on his niece's arm, and accompanied by Mrs. Stretton and Carey, move slowly toward the interior of the island, as if he had a mind to see the place; and the moment they disappeared we set to work.

The rigidity of the body I had buried during the preceding night determined me not to disturb it. I explained this to the seamen, and Tripshore said he believed that poor Jim Wilkinson would make the best body for our purpose. The two corpses had been buried above high-water mark, and the places where they lay were distinguishable by the appearance of the sand there. But the men could not remember in which of the graves Wilkinson's body was, and therefore we had to clear away the sand to find it out.

Every nerve, every fibre in my body seemed to shrivel and shrink up at the bare contemplation of exposing the poor fellows' remains, but I would not suffer my inward loathing and horror to master me. I was persuaded that the raft, if sighted, would serve our purpose more effectually if it carried a dead body than if it went bare; and the needs of eight human lives in dire peril, and without any prospect of preservation if help was not summoned, determined me to persevere in our scheme.

Tripshore worked with a dogged resolution, as if, like me, he would not permit his feelings to master him. Hunter showed no emotion at all. Happily, the first grave we uncovered contained Wilkinson's body. We raised it, and dusted the sand from its face, and carried it to the raft. I should have been willing to let it lie on its back, with a piece of canvas over its face; but Hunter, with whom this scheme had originated, said:

"No, no, sir; let's do the job thoroughly. He must be fixed sitting upright, and then they'll think him alive, and bear down. If they see him on his back they'll say, 'Oh, he's dead,' and sail away."

I could not deny that he was right; so we sat the body up with its back to the mast, and lashed it in that posture; but so dreadful an object did it look that I was oppressed with a deadly giddiness and sickness after we had completed the loathsome business, and had to sit for a while and keep my eyes closed.

Nothing now remained to be done but to make the clews of the sail fast and send the raft adrift. The first was easy enough, but the other very difficult; for, calm as it was, the ground-swell betwixt the beach and the reef was tolerably heavy, and would quickly drive the raft ashore and strand her if we did not mind. To guard against this, we carried a line round the mast, keeping both ends in our hands, and, arming ourselves with pieces of timber to shove her clear, we scrambled across the limb of land and reached the extreme point of it, where we hauled upon the line and brought the raft abreast. Then, unreeving the line, we went into the water as high as our waists, and, by dint of shoving, got the raft clear, when her sail at once caught the wind, and away she crawled, dead to leeward, but very steadily, the long rudder-like board astern of her heading her perfectly straight, and the body sitting in the shadow of the sail like a living man.

We scrambled back again to the beach and mounted the hill to watch her, Norie joining us and bringing the telescope with him. Sir Mordaunt and the women were coming slowly along from the west side of the island, but observing me to motion and point, they hurried their pace; but before they reached the hut they stopped and stood looking at the raft, that would be visible to them from that point. I saw Miss Tuke turn to her uncle and then point to us and then at the raft, clearly astonished at the sight of the man on board, and wondering who it could be. Norie,

before joining us, had hove a quantity of damp brushwood onto the fire, that sent up a dense column of smoke that arched over into a beautiful bend when it reached a short height, and went blowing along the sea, casting a long black shadow upon the water, in the very middle of which the raft crawled steadily forward, like a cart going along a straight road. The shadow on her made her an extraordinarily clear figure against the blue water and the sky of the horizon. I was sure that no ship, keeping anything like a good lookout, could miss her; and as she went further and further away and became smaller upon the flashing waters of the southeast I felt a new stirring of life in me: hope grew buoyant, and for a little time at least I was more lighthearted than I had been ever since that gale had burst upon the Lady Maud and driven us in darkness into these dangerous waters.

The three of us who had built that raft stood watching her until she was a mere speck in the wake of the smoke. Then, muttering an earnest prayer to God that she might effect our purpose, I went down the hill, the seamen following me.

Catching sight of the turtle as I walked, I told Hunter to kill it; first, because I knew it is a cruel thing to keep those animals long on their back; and secondly, because its meat would save the other provisions and be a relish for us, who, Heaven knows, stood in need of any comfort in that way that we could come at. I was in no mood to watch him destroy the creature, so I walked over to the trees under whose shadow Sir Mordaunt and the others were resting themselves. On my drawing near, Miss Tuke asked me eagerly who the person was that had gone away in the raft. I was obliged to tell her, but I did so with reluctance and a kind of shame.

"Was he *dead?*" she exclaimed, in a thrilling whisper, and grasping Mrs. Stretton's hand.

I exactly explained our motive, but the shocked expression lingered long in her face.

I was worn out and overcome with the heat, and threw myself down upon the grass. Seeing my exhaustion, Mrs. Stretton filled a shell with sherry and water and I swallowed the draught gratefully. She then came and sat by my side. I had had little to say to her since we had been cast ashore, and small leisure to observe her closely. She had removed her hat, one that Miss Tuke had given her, and which the sea had soaked without tearing from her head—I say, she had removed her hat when under the trees, and her thick, black, beautiful hair had come away from its fastenings, and hung about her in a manner that gave a peculiar power and a wild kind of spirit to her dark, handsome and uncommon face.

"You bear your sufferings with admirable courage," said I. "Hard as our plight is, your trials have been so heavily in excess of ours that I can only admire and wonder at your fortitude and patience."

"It will not do to look back," she answered. "We might humbly wish that God's hand had fallen less heavily upon your poor friend, Mr. Walton."

"I hope," said I—we spoke in a low voice that could not be overheard—"that Miss Tuke does not think hard of me in helping to send a poor dead man in quest of succor. Heaven knows, whatever I have done I have done for the best."

"Oh, be sure we all believe that," said she, with a note of rich and tender gratitude in her voice. And, after a short silence, she asked, "Do you think we shall ever get away from this island?"

"Yes," I replied; for whether I thought so or not, the proper answer to her question was yes.

It was a bitter thing to look at our miserable repast that day and round upon our rude hut, and recall the Lady Maud's sumptuous cabin and plentiful, good fare. Only a painter could give you any idea of the interior the hut presented and of our appearance as we sat or stood eating with our fingers. No one who has not suffered in that way can imagine what it is for the civilized instincts to find themselves abruptly and helplessly plunged into a state of pure barbarism.

We made in that hut a complete picture of a shipwrecked party. Sir Mordaunt, as I say, was without coat or hat; I was in my bare feet; Norie had not yet manufactured the extraordinary cap from a piece of canvas that he afterward wore. Though the sun had dried our clothes, yet the salt water had given them a most beggarly aspect, especially the women's.

"I wonder," says Norie, filling the shell with water from the kettle, and eyeing it with an air of rueful wonder—"I wonder if such a calamity as this ever befell a yachting party before?"

"It may well have happened," said I.

"And it may happen again, sir," said Tripshore.

"How long will it take the raft to get into the track of ships?" asked Miss Tuke.

This question started us on a new conjecture, but it was quite impossible to arrive at any conclusion, simply because we had no notion in what part of the Bahamas this island lay.

"If only the chart of these islands had been washed ashore," said I, "we should be able to form some idea how far distant the nearest inhabited land is by giving this rock a theoretical position. The only islands I can remember as inhabited are New Providence, Abaco, Andros and Inagua. Of course, there are others but my memory does not carry them. Yet even the islands I name run from the high north away south as far as the Windward Passage; consequently, this cay cannot be very far from *one* of them. But how does that one bear? How far is it? How are we to reach it?"

"That's it, sir," answered Hunter. "If them questions could be answered, there'd be no call to worrit ourselves long."

"Suppose a ship sights the raft, what will she do?" asked Mrs. Stretton.

"Why, mum," replied Tripshore, "if her skipper has eddication enough to read the board and has a mind to help us, he'll carry the board along with him to the port he puts into and give information there, and a vessel will be sent to look for us. Or if he be bound on a long woyage, then I suppose he'd speak the first ship he met and give her the news, who'd report the wreck on her arrival. That would be about it, sir, I think?" said he to me.

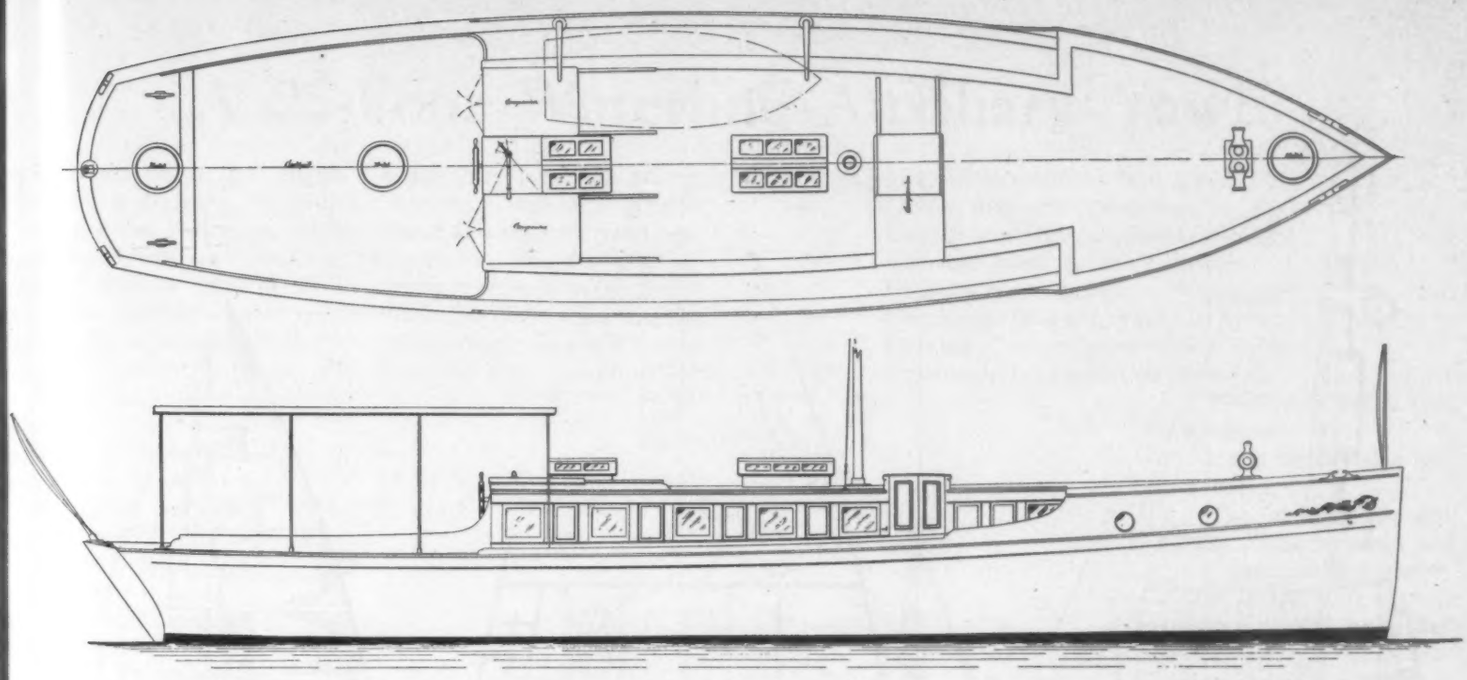
I answered yes, though if a government ship encountered the raft she would probably start in quest of us at once. "But," said I, in a hopeful voice, "be the vessel that sights the raft what she will, help is sure to come." And so speaking, I went out of the hut, calling to Tripshore and Hunter to follow me.

As we went towards the well I told Hunter to go to work presently and clean the flesh out of the shell of the turtle, and then the shell would serve us for a tank. It was too great a tax, I said, to be obliged to cross the island every time we wanted a drink.

After reaching the well and quenching our thirst, we stood awhile looking away into the sea in the north. This side of the island was very flat, and yielded us but a narrow horizon. I saw the white ribs of a great reef glancing in the dark blue water about a mile away in the northwest, and beyond that was a shade upon the sea that looked like the eddies formed by a tide running over the shallow surface of another reef.

"Can we be among the shoals to the westward of Long Island?" said I, remembering on a sudden the swarms of little cays and reefs marked upon the chart over against that piece of land. "If so," I added, with a feeling of despair in me that I could not check, "I can't see how on earth we are to be rescued, unless

(Continued on page 64.)



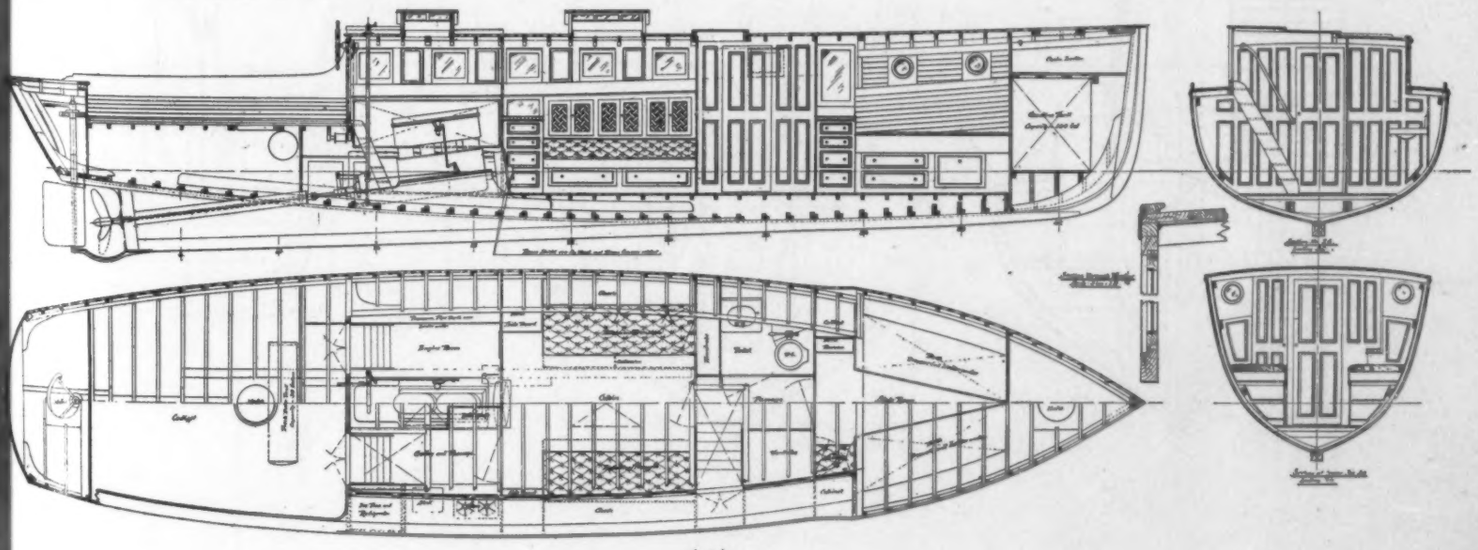
A 48-Foot Cruising Power Boat

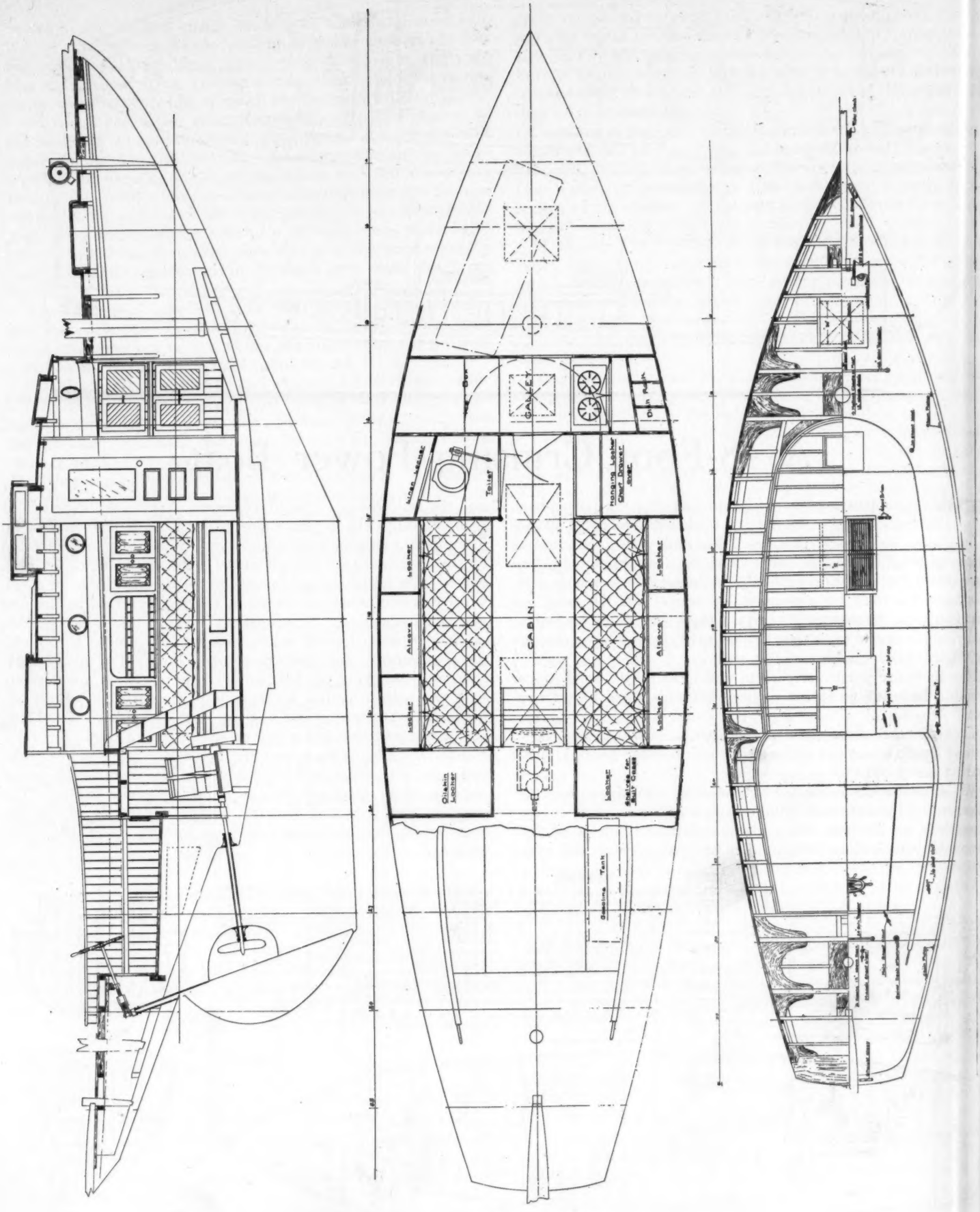
THE accompanying plans of a 48-foot cruising power boat, recently designed by Messrs. Gielow & Orr, of 52 Broadway, New York City, for J. R. Hanify, Esq., commodore of one of the Pacific Coast yacht clubs, have novel points to commend them that will prove of interest to every motor boat man. The boat was built for a comfortable cruiser and day boat, for which purpose she was given a large cockpit with ample seating capacity, while at the same time her accommodations below are extremely liberal for a boat of this size.

Her lines are particularly clean and graceful, in spite of her generous beam of 11 feet, a point which adds much to her comfort.

The principal dimensions are: Length over all, 47 feet 7 inches; length waterline, 44 feet 4 inches; extreme beam, 11 feet; draft, 3 feet 3 inches.

The engine room is located just abaft of amidships under the after end of the extension trunk cabin, and is entered by a companionway on the port side. On the starboard side is another companionway leading into a galley and passageway that opens into the main cabin. This arrangement obviates the necessity of going through the engine room in order to get into the cabin. There is still another companionway to the living quarters located on the starboard side just aft of the point where the raised deck ends. This latter companionway opens aft into the main cabin, which has two extension transoms, forming excellent berths, and two large sideboards. It also opens forward into a passageway, on the port side of which is located a good-sized toilet room, with the usual fittings, and a large wardrobe. Forward of this passageway, and occupying the full width of the vessel, is a stateroom, with two built-in berths, arranged with drawers and lockers underneath. At the after end of these berths are a bureau and mirror on the port side and a seat on the starboard side. Forward, a round deck hatch leads into the forepeak. There is a transom and pipe berth for a paid hand in the engine room. The power consists of a 25-horsepower, 4-cylinder gasolene engine. The gasolene tank is located forward, and has a capacity of 100 gallons, while the fresh-water tank is located under the cockpit floor.



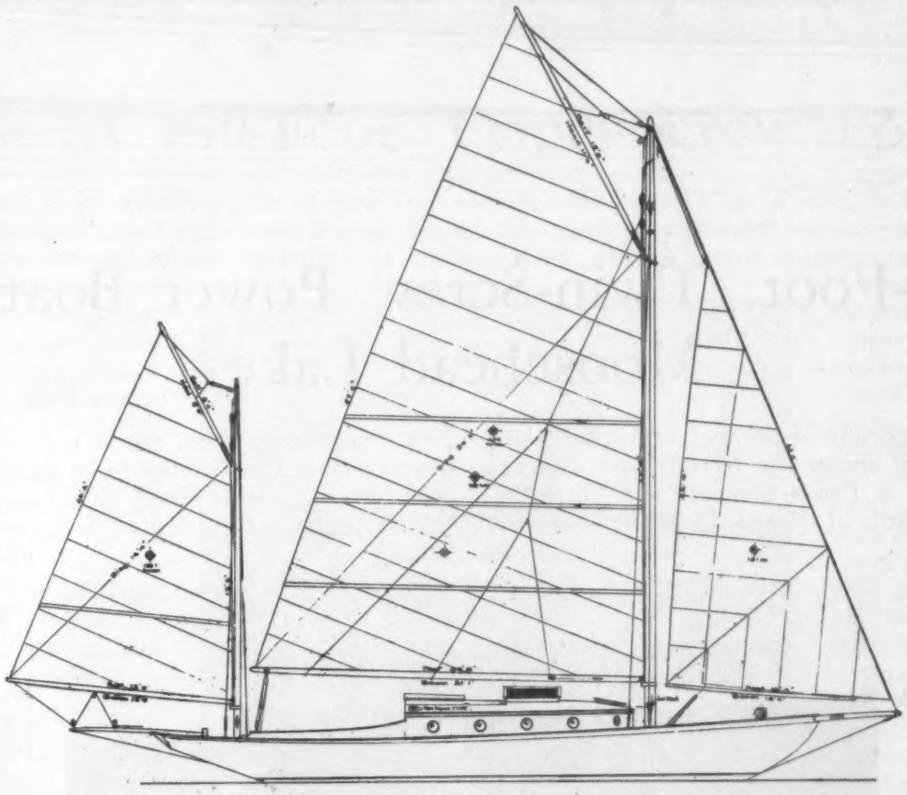

CABIN
Locker
Quarter Locker
Sleeping Berth

A 25-Foot Waterline Auxiliary Yawl

THE use of the gas engine for auxiliary power in sailing boats designed for cruising has come into such general use that the accompanying plans of a 25-foot yawl, designed by Bowes & Mower, of Philadelphia, Pa., for cruising purposes, will be particularly interesting. The boat is for a New York yachtsman and will be built this fall. She was designed with the idea of turning out an extremely able and roomy boat, with a waterline length of 25 feet, and with enough power to insure making the harbor at a fair rate of speed in the event of a calm. The installation of the engine has been very well worked out, so as to give plenty of room around it, and, at the same time, keeping it entirely out of the cabin. It is under a ridge deck which extends across the boat at the forward end of the cockpit, with only the flywheel projecting into the cabin under the companion steps.

The cabin is large, with full headroom, and with an amount of locker space that is unusual in a boat of this size. Forward of the saloon, on the port side, is a toilet room, while on the starboard side is a large hanging clothes locker with a chart drawer over it, the latter extending to the deck beams and leaving a shelf for a buffet between its top and the roof of the cabin house.

The galley is under the cabin house, and is well arranged, with ample stove and ice-box accommodation, and is ventilated by a skylight.



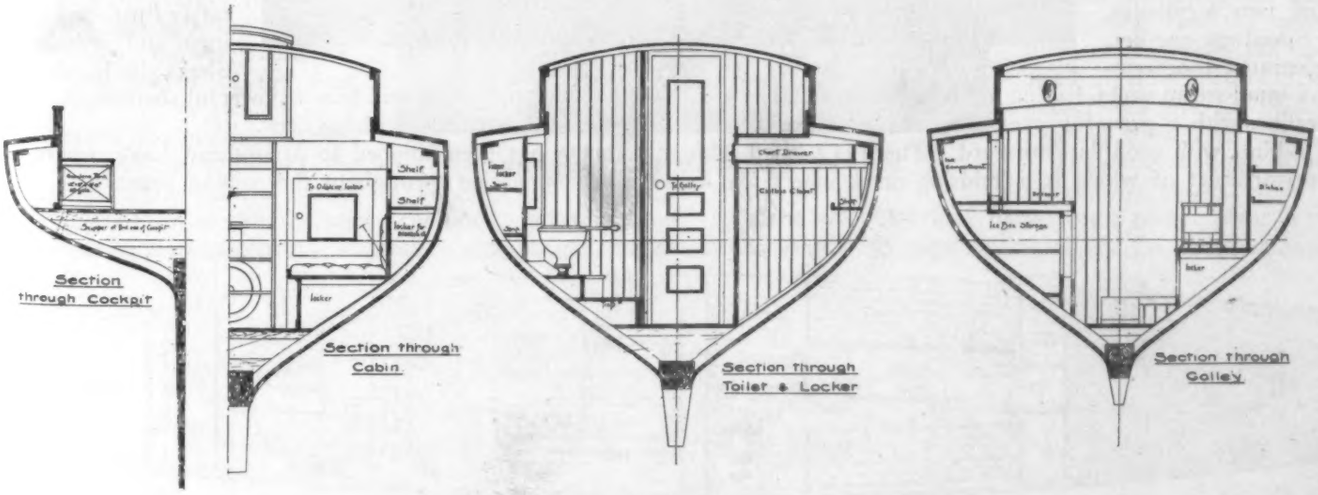
The principal dimensions of the boat are:

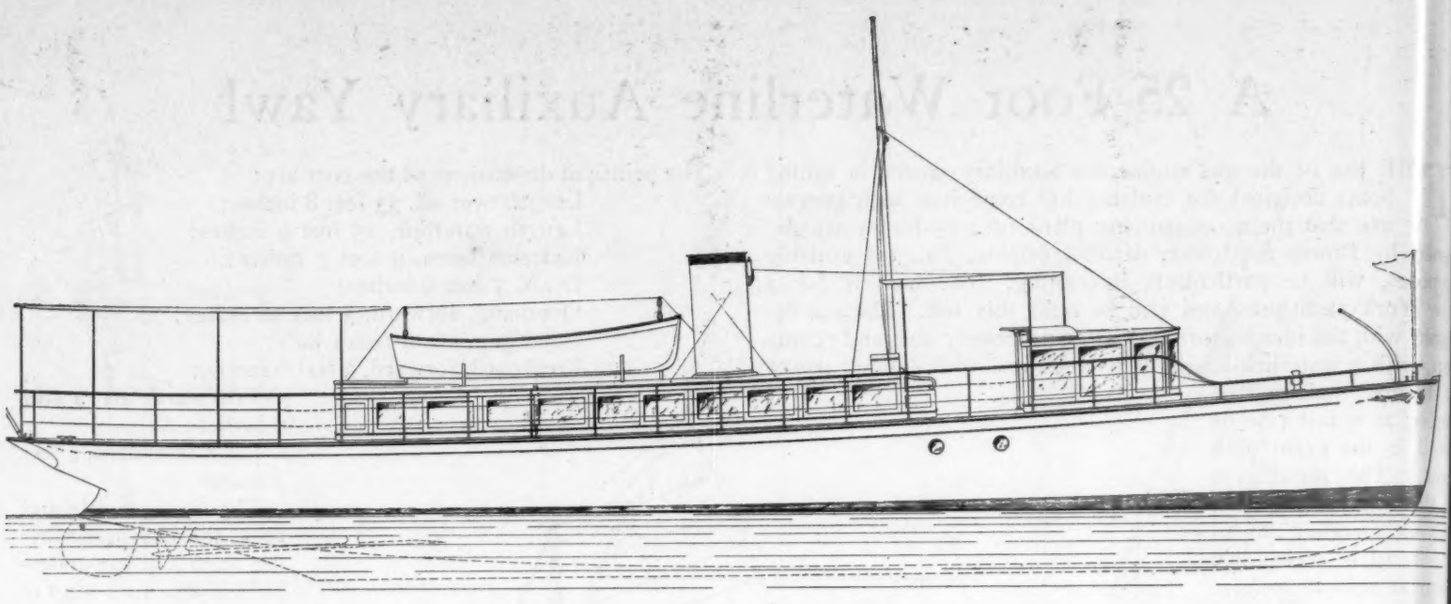
Length over all, 35 feet 8 inches;
Length waterline, 25 feet 9 inches;
Extreme beam, 9 feet 7 inches;
Draft, 5 feet 6 inches;
Overhang, forward, 3 feet 10 inches;
Overhang, aft, 6 feet 1 inch;
Freeboard, forward, 3 feet 6 inches;
Freeboard, aft, 2 feet 8 inches:
Least freeboard, 2 feet 3 inches.

The lines are fair and easy, the overhangs being short and the underbody sharp forward, which should make her particularly able in a seaway. There is pleasing sheer and good freeboard. The sail area is well distributed, there being a total of 710 square feet, divided as follows: 440 feet in the mainsail, 130 feet in the jib, 140 feet in the jigger.

The cockpit is large and roomy. The gasolene tanks are located under the cockpit seats, so that any possible leakage will drain overboard. The engine is an 8-10 H. P., 2-cylinder gasolene motor. She is heavily constructed and well braced with oak knees, and the frames are of ample size to insure strength.

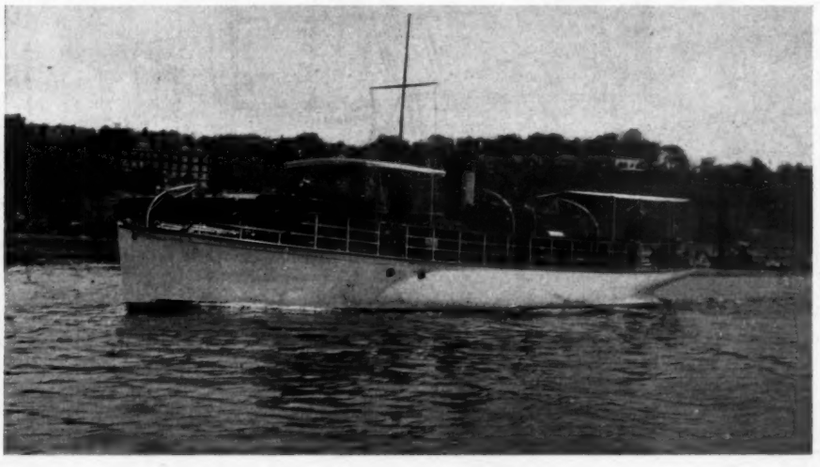
She is a fine, able little boat, and should prove a fast cruiser under sail, while the engine should give her a speed of at least 6 knots under power alone.





A 65-Foot, Twin-Screw Power Boat for Moosehead Lake

RATHER a radical departure in the way of a combination power day boat and cruiser has recently been designed by the Gas Engine & Power Company and Charles L. Seabury & Co., Consolidated, of Morris Heights, New York City, for Rear-Commodore A. B. Waring, of the Moosehead Lake Yacht Club, the boat being designed particularly for use on that body of water.



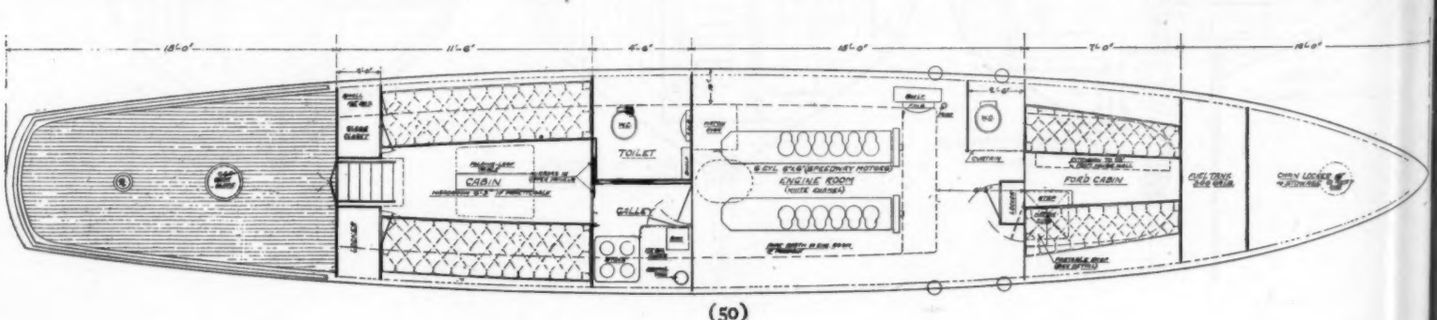
She will be called Ioneta, and her general dimensions are: Length over all, 65 feet; beam, 10 feet, and draft, 3 feet. She was designed to have a speed of at least 16 miles an hour, although on her trial trip 18¾ miles per hour was obtained, the power consisting of two 6-cylinder, 6″ x 6″ Speedway engines.

In appearance Ioneta resembles a small steam yacht, having a flat or torpedo stern below the waterline, with a graceful overhang above. The stem is slightly raking, with good flare forward. There is a small cabin house forward, aft of which is a 'midship deck, where are located the steering wheel, engine room telegraph, navigating appliances, etc. This is followed by an after deck house or trunk cabin covering a large saloon, toilet room, galley, etc. On either side of this house there is good deck space in the form of a wide alleyway, while there is a commodious after deck for the use of yacht and deck chairs.

The engines are located just forward of amidships, assuring proper distribution of the weights and dividing the living quarters into a forward and after cabin, which is a very desirable feature when cruising with ladies aboard.

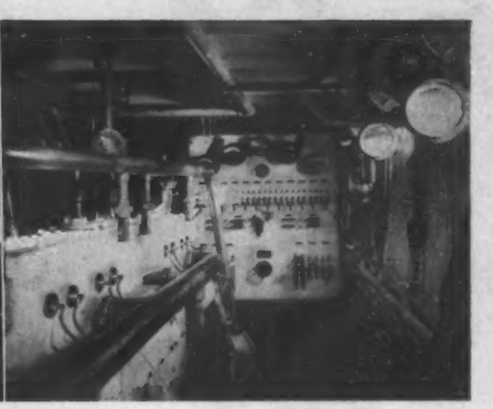
The yacht is finished throughout with mahogany, and will be very elaborately furnished with hangings and upholstery, etc. She is also lighted throughout by electricity, and will have a powerful searchlight, which will be operated from the 'midship deck.

Ioneta has been shipped to Moosehead Lake, where she will be in commission throughout the coming summer.



OWNER'S STATEROOM.

AFTER DECK, SHOWING DECK SHELTER.



ENGINE ROOM.

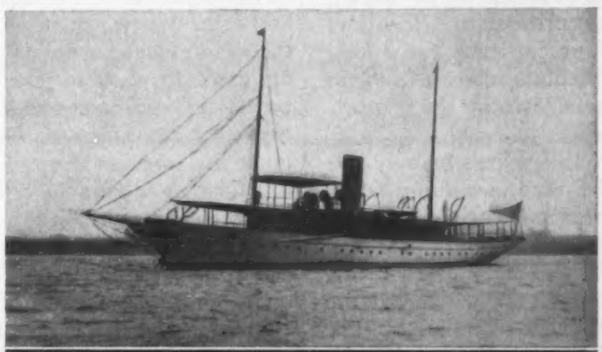
La Belle—A 140-Foot Triple-Screw Power Yacht

A NEW motor boat, which recently arrived in New York on the way to the Great Lakes and created a great deal of attention as she came up through the harbor, by reason of being the largest yacht equipped with gasolene engines yet built, was La Belle, the 140-foot steel motor yacht designed by Messrs. Cox & Stevens, of New York, for Commodore Alexander Winton, of the Lakewood Yacht Club.

La Belle is a noteworthy vessel in many ways, being constructed entirely of steel, and designed for the purpose of providing for the owner a comfortable cruising vessel, having every possible convenience, and being intended to give a good account of herself in all conditions of weather.

She is 140 feet over all, 118 feet waterline; the beam is 19 feet, and she draws 7 feet 6 inches. In appearance she is a modern steam yacht, with clipper bow and stern, lively sheer, good freeboard, well-proportioned ends, pole masts and continuous deck house, ventilating stack and navigating bridge. She is flush deck throughout, with high bulwarks, and has a shade deck extending to the side of the vessel and running the full length of the deck house.

The owner's and guests' quarters are all aft. An inspection of the plan shows that this portion of the vessel contains three unusually large staterooms, extending the full width of the vessel, two single staterooms and two bathrooms. In order to avoid loss of space by fore-and-aft passageways, the designers have provided two stairways giving access to the rooms below, which is a novel and very practical feature.



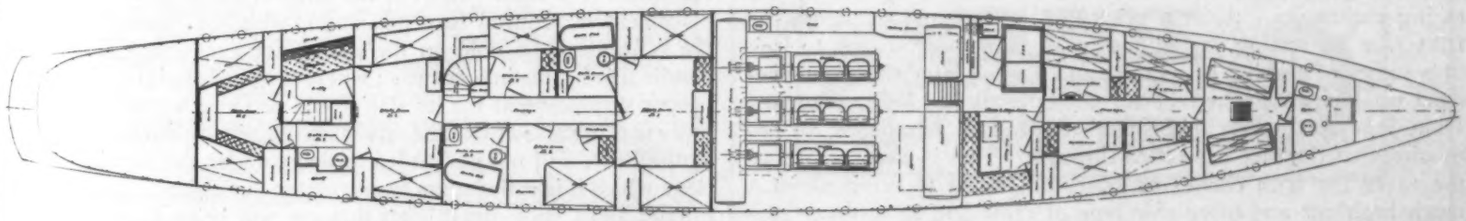
COMMODORE WINTON ON BRIDGE OF LA BELLE.

It is of special interest to note that Commodore Winton himself designed the motors for this vessel, and had them built in his own shops. They have given remarkable results, having run with absolute regularity, practically no vibration, and with very low fuel consumption. The exhaust is absolutely noiseless.

La Belle is an instance of a motor vessel having as heavy displacement as a good, substantial steam yacht. She has bilge keels, and rolls very little. Her pronounced flare and moderate ends, high bulwarks, good freeboard, etc., all make for comfort and seaworthiness.

The advantages of the triple-screw installation are manifest. While moving through crowded waterways and places where extremely low speed is desirable the center engine furnishes sufficient power. For moderate cruising speed and on trips where time is of no object the port and starboard engines may be used by cutting out the center power plant, while, when full speed is desired, all three motors turning up together will give La Belle the maximum of which she is capable.

The great economy which this arrangement allows when compared with the waste of fuel for a single power plant at low speed will immediately commend itself to the cruising yachtsman.



EDITORIAL

Published by the Yachting Publishing Co.; Oswald Garrison Villard, President; Herbert L. Stone, Secretary and Treasurer

What the Manhasset Bay Cup is Doing for Racing.

That the Manhasset Bay Challenge Cup is fulfilling the purposes for which it was offered—namely, the promotion of inter-club racing among the smaller boats, handled by Corinthian crews—is evident from the fact that the series of races for the trophy this summer will see at least eight boats taking part, representing an equal number of clubs as widely separated as Larchmont and Portland, Me. Of these boats, four were built this year with this particular contest in view, while two of the others were built two years ago to race for the same trophy. This is a particularly gratifying sign, inasmuch as it is a larger and more representative fleet than has been gathered together for a challenge cup race for a long time. Such events as this do more to stimulate interest in yacht racing than any amount of large boat racing, where the competing yachts are handled by professional crews.

The boats that will take part in the race this year, which will be held at the western end of Long Island Sound, are the defending boat Cara Mia, representing the American Yacht Club, and owned and sailed by Stuyvesant Wainwright, who won the trophy for his club last year; the Windward, owned by R. A. Monks, representing the Larchmont Yacht Club, and the winner of the cup in 1909, when the boat was owned by the Indian Harbor Yacht Club; the Joyant, a Herreshoff boat, built for W. H. Childs, of the Indian Harbor Yacht Club; Corinthian, another new Herreshoff boat for a syndicate representing the Seawanhaka-Corinthian Yacht Club, and four boats from Eastern waters—viz., Sayonara, a new Owen-designed boat, built this year, and representing the Portland Yacht Club; Italia, another Owen boat, built for George Lee, of the Boston Yacht Club; Timandra, owned by J. B. Fallon, of the Eastern Yacht Club, and Amoret, owned by C. B. Wheelock, of the Corinthian Yacht Club of Marblehead, and winner of the Massachusetts Bay Championship last year. All four of the Eastern boats are from designs by Owen, so that the race has a double interest in bringing together the product of the designs of Owen, Herreshoff and William Gardner. The boats are all in the P class, and the result of the series will not only be watched with great interest by everyone interested in yachting in this country, but will also do much to bring into closer touch the various sections of the Eastern coast that are represented in the event.

The Failure of the Bermuda Races.

After five annual races to Bermuda for sailing yachts and four for power boats, it would seem as if interest in this off-shore thresh of some 700 miles was losing its hold on the interest of racing yachtsmen. After a great deal of talk and publicity, the 1911 race for sailing yachts had to be abandoned, owing to lack of a sufficient number of entries; and a week later the announcement was made that the race for power boats had been postponed from June 17 to early in September, which is practically an admission that the race has fallen through. This is unfortunate, as the races for both classes of boats did much to bring about a much healthier and more able type of craft and to promote seamanship; and they gave the amateur sailor confidence both in his own ability and in the ability of his boat. It got men out of the habit of racing around the short triangular courses in sheltered waters and took them off soundings, and was an inducement to many of them to take up navigation.

Starting first as a race for small boats, the event lost much of its popularity with small boat owners, who were its chief supporters, when larger craft were admitted, owing to the fact that the larger boats always got there first, got most of the glory, and also most of the prizes. As I have often said before, owners of large yachts are not keen for the discomforts of off-shore racing, and after the two or three who could be induced to go had made the passage once or twice the novelty wore off and no other owners came forward to take their places. This is true of both the power and sail-boat races. In the former case particularly the man that can afford to own a power boat of the proper size to make the journey is not, as a rule, over-anxious to incur the discomforts or to take the risk, slight as it might be. I do not think that the interest in long-distance racing is on the wane, but rather that interest is turning towards a somewhat shorter race—one that can be sailed in 24 to 48 hours, and that takes the boat along a course requiring nothing more than pilot water navigation, with a port nearly always under the lee that a man can get into in case of necessity. Such races are open to seaworthy boats of 30 feet and upwards in length, manned entirely by Corinthians, and it is these men that are the backbone of the sport, when you "come right down to brass tacks," either in cruising or in racing.

The Tendency Towards Hydroplanes.

It is, of course, natural, after the performance of Pioneer in the International Race last year, and in view of the wonderful development that the past few seasons has brought in hydroplanes, that the tendency in all boats intended for speed should be toward the hydroplane type. The question resolves itself into one of the least displacement and greatest power, and for that purpose hydroplanes certainly seem to have the call. Beyond doubt we shall see a greater speed in the International contest of this year than ever before, and it is probable that that speed will be made by a hydroplane. The only danger is that, in the first flush of enthusiasm for this type of boat, the pendulum will swing too far, and that the type, or a modification of it, will be used in boats for which the model was never intended. Already in cruising power boats we see the tendency to lessen displacement to a point where it is an absolute detriment, both to the ability of the boat and to its comfort, for the purpose for which it is used. Even in the large cruising power boats displacement is reduced to a minimum, with the consequence that the boats have no hold on the water, are excessively lively, and handle like brutes in a seaway; whereas a well-designed boat with proper displacement for its size would produce a much abler and more comfortable craft, and one which, if proper attention is given to the lines, will not be harder to drive under the varying conditions which it is called upon to encounter throughout a season than the flat, light, shoal-draft boats that are now being clamored after.

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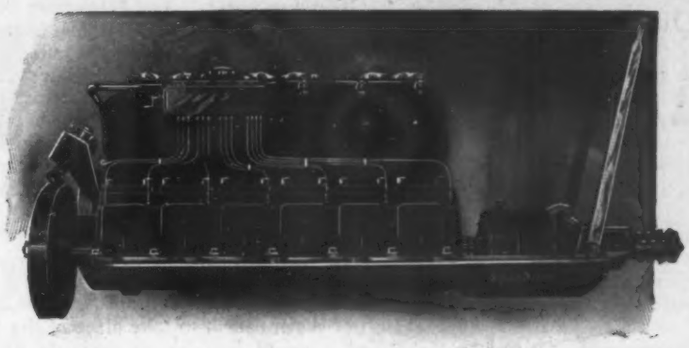

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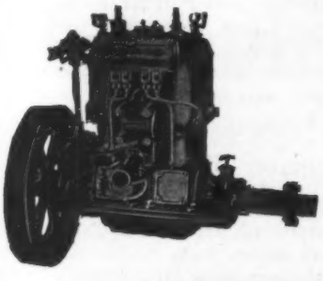

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Driftwood from Along Shore

A Large Entry List for the Mississippi Valley Regatta at Dubuque

A large entry list of the fastest motor boats in the country has been received for the M. V. P. B. A. regatta at Dubuque, Iowa, July 4, 5, 6. The following already are officially entered, and it looks as if a number of speed records would be shattered before the event comes to a close:

Disturber II, designed by W. H. Fauber, 400 horsepower, 16 cylinders, twin screws, 31 feet 10 inches. Owned by Commodore James A. Pugh, Chicago, Ill.

Red Top III, designed by W. H. Fauber, 300 horsepower, 8 cylinders, 35 feet 10 inches. Owned by Commodore W. E. Hughey, Bellevue, Iowa.

Dixie IV, designed by Clinton H. Crane, 600 horsepower, 39 feet to 40 feet, twin screws, 16 cylinders. Owned by Vice-Commodore Fred. K. Burnham, New York.

Comet (monoplane), 6 cylinders, 60 horsepower. Owned by Kelso and Hillsinger, Bellevue, Iowa.

Missouri, designed by Beauvais, 8 cylinders, 100 horsepower, 26 feet. Owned by H. Lippert, St. Louis, Mo.

Emerson II, designed by Emerson Engine Company, 12 cylinders, 20 feet, 250 horsepower, twin screws. Owned by J. Stuart Blackton, Brooklyn, N. Y.

F. E. S., designed by Dubuque Motor Boat Ways, 6 cylinders, 80 horsepower (monoplane). Owned by George Schreiner and Charles Scheppele, Dubuque, Iowa.

Vim Dubuque, designed and owned by Dubuque Motor Boat Ways, 8 cylinders, 110 horsepower, 31 feet 10 inches.

Teaser, designed and owned by J. A. Moritz, Quincy, Ill., 20 feet, 60 horsepower.

Pronto III, designed and owned by George E. Smith, Peoria, Ill., 6 cylinders, 60 horsepower, 20 feet.

La Crosse, designed by Breese, 20 feet, 3-step, 2-notch hydroplane, 210 horsepower, 8 cylinders.

Scamp III, designed and owned by Peterson Bros., Davenport, Iowa, 19 feet 6 inches, 4 cylinders, 60 horsepower (monoplane).

The following have been verbally promised:

The Yankee, Elco plane, 39 feet, 600 horsepower, twin screws, owned by A. E. Smith, Brooklyn, N. Y.

Secret 20-footer, 250 horsepower, 12 cylinders. Owned by Albert E. Smith.

Topaz, designed and owned by E. P. Gould, Chicago, Ill., Berwyn Avenue, 20 feet, 100 horsepower (monoplane).

The following have not promised by letter, but friends report boats are intended for this regatta:

Ed. Koenig, St. Louis, Mo. Understood to be 20-foot boat, designed by Beauvais. Guaranteed speed of 33 miles.

Mrs. George W. Murray, Beaver Dam, Wis., 32 feet, 120 horsepower. Engine of French design.

E. Corsepius, Fort Madison, Iowa. Understood to be 40-foot boat with two sets of engines, one screw working ahead and below the other, and one engine just forward of the other.

Harold V. Nelson, No. 3932 River Drive, Moline, Ill., 20-foot dark horse.

The following have promised to make every effort to get their boats tuned up and on hand July 4:

Hoosier Boy, designed by Truitt & Stillman, Chillicothe, Ill. Owned by J. W. Whitlock, Rising Sun, Ind.

Eph, designed by Seabury & Co., 400 to 500 horsepower. Owned by Carl G. Fisher, Indianapolis, Ind.

Manhasset Bay Y. C. Open Championship Challenge Cup for motor boats.

Manhasset Bay Yacht Club Championship Cup for Power Boats

The Manhasset Bay Yacht Club will this year hold a championship race for high-speed power boats of unlimited power on Saturday, August 19, in Manhasset Bay, Long Island. The race will be open to all motor boats 35 feet over all, or under, free-for-all, with no restrictions except length of huli. Many entries have already been received, and the event should prove very interesting, as it will undoubtedly attract the fastest boats in these waters. The Manhasset Bay Yacht Club will also hold races for the following classes of motor boats on Saturday, August 19: Class A, not over 35 feet over all, unlimited power; Class B, not over 25 feet over all, and not over 35 horsepower; Class C, not over 18 feet over all, and not over 14 horsepower. There are no other restrictions.

Handsome prizes have been presented by members, to be awarded the winner in each class. If sufficient number start a record prize will be awarded. For further particulars address James E. Alker, chairman race committee, Manhasset Bay Yacht Club, Port Washington, L. I.

Cup for the Buffalo Section of the A. P. B. A.

A meeting of the Council of the American Power Boat Association has been called, to take place at the Waldorf-Astoria, New York, on the evening of June 15, to draw up deed of gift and consider conditions for a Silver Cup offered under the auspices of the association by the Buffalo section for a perpetual challenge trophy for cruising motor boats.

The first race for this cup is to be run off under the auspices of the Buffalo section at Buffalo, N. Y., at a date to be settled at the meeting of the Council.

This trophy will represent on the Great Lakes the championship and supremacy among cruising motor boats, and will occupy a position similar to that of the Marblehead race or other long-distance events held on the Coast.

At the meeting of the Council the matter of choosing the third judge for the match held for the association's Gold Challenge Cup on the Great Lakes will also be acted upon. Under the deed of gift of the Gold Challenge Cup the challenged and challenging clubs each select one judge, the third being selected by the Council of the association. The Gold Cup of the association has been raced for for a number of years, and has come to represent the national championship for boats of unlimited power under 40 feet over-all length. This year's race is expected to bring out some of the new boats built to defend the British International Trophy, and it is hoped also that the English challengers may be induced to compete.

Lloyd's Register of American Yachts for 1911

The ninth annual edition of Lloyd's Register of American Yachts differs from its immediate predecessors only in the increasing predominance of power over sail and of the gas engine over the steam engine; the proportion of the power craft being still greater than last year, while individual examples show the rapid growth in size of the gas-propelled type.

In spite of its lessening numbers and tonnage, the sailing division of the fleet claims first notice this year through three important additions to the schooner class—Enchantress, Elena and Karina. The first, designed by Cary Smith & Ferris, and built by the Lawley & Son Corporation, is for Mr. William E. Iselin. The new yacht is of steel, 136 feet over all, 100 feet on the waterline, 27 feet breadth, and draws 15 feet without her centerboard. She was built to Lloyd's rules, classing 100 A-1, and she represents the latest advance in yacht construction. Karina, designed by Theodore D. Wells, and built by the Staten Island Shipbuilding Company for Mr. Robert E. Tod, replaced the well-known Thistle, and, like her, is designed for offshore cruising. She is of steel, 198 feet 7 inches over all, 150 feet on the waterline, 33 feet 9 inches breadth and 17 feet draft, with no centerboard. She has three masts, with fore-and-aft rig. Elena is a new racing schooner for Mr. Morton F. Plant, a successor to the schooner Ingomar, which he raced with such success abroad and at home half a dozen years since. She is of steel, a keel vessel, designed by N. G. Herreshoff, and built at the Bristol shops; 136 feet 6 inches over all, 96 feet on the waterline, 26 feet 8 inches breadth and 17 feet draft.

The relation of these three modern yachts to the gas engines is in itself most interesting. Elena is strictly a sailing yacht, and her owner has

Don't Buy a Motor Boat

UNLESS YOU INSIST UPON HAVING A SEAMLESS STEEL SAFE TANK

A Leaky Boat Is Pretty Bad But

A LEAKY TANK IS WORSE

Gasoline is mighty dangerous stuff, so when your Riveted Makeshift Tank springs a leak, and your boat is burning, just send us a wireless order

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FOR A LEAKLESS TANK

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LET US FIT YOU OUT RIGHT NOW!
Think This Over—Mr. BOAT OWNER!

Seamless Steel
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Write for International Flag Code in Colors, Free.

Splitdorf Magneto

A Masterpiece of Ignition

Ask any user of a SPLITDORF about its quality.

He will tell you that he gets **more power**—that it makes his motor run **much smoother and quieter**—that he **never has** any Ignition **trouble**—that it gives the same efficient service without attention, even after **months** of **constant use**—that the engine never skips—in short that it is

AN IDEAL IGNITION SYSTEM

You can have the same satisfactory service by equipping your boat with a SPLITDORF.

ASK FOR MAGNETO CATALOG

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Chicago. 1110 S. Michigan Ave.
San Francisco: 520 Van Ness Ave.
Detroit: 868 Woodward Ave.
Boston: Motor Mart
Los Angeles: 1226 S. Olive St.

Walton Ave. and 138th Street
Branch, 1679 Broadway
NEW YORK

A New 40 ft. TRUSCOTT

"The Lady of the Lake"

This newest Truscott model embodies every convenience, comfort and luxury that is desirable and requisite in a cruising yacht. It is designed and built expressly for the man who demands the highest perfection and efficiency, but whose requirements and preferences are for a medium sized boat rather than an immense yacht. No other Day-Cruiser meets those conditions so well or so completely. "The Lady of the Lake" is

Especially Appropriate and Desirable for Service on the Bays, Gulfs and Harbors Which Abound on Either Coast

as well as on rivers and inland lakes, and has structural features which make it doubly attractive to one appreciating good living and luxurious comfort while on the water. Among these features are the roomy saloon, equipped with ideal buffet and refrigerator arrangement; the forward open portion, permitting the enjoyment of the "outdoors" to the fullest extent; the unusually spacious toilet accommodations; the paneled cabin, the very epitome of snug comfort; and the roomy cockpit with raised floor, which gives a broad view not possible with any other arrangement.

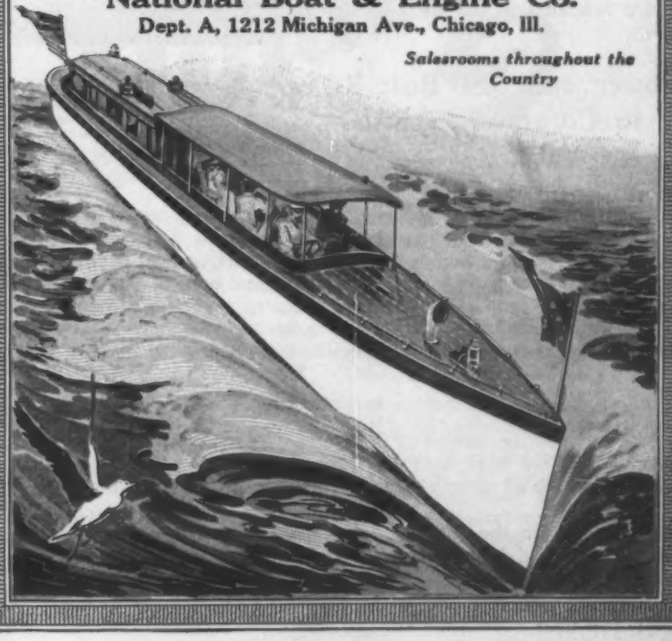
It is essentially a boat for the best people and the most fastidious society matron can entertain as many as fifteen people in comfort and enjoyment—for an entire day's outing.

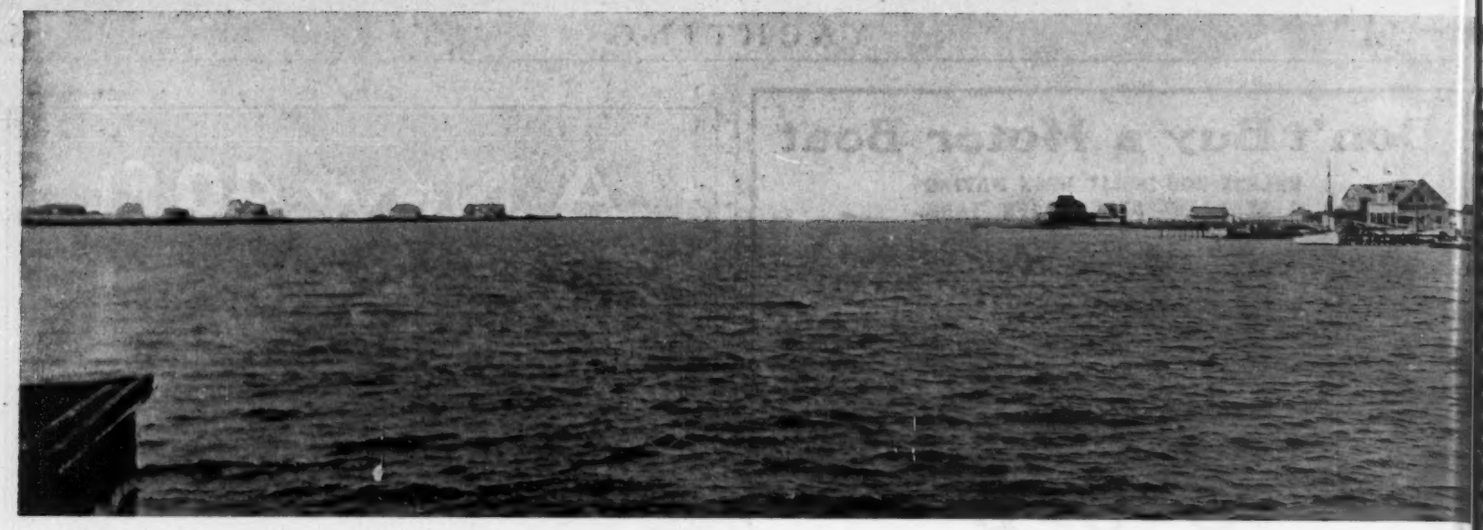
In appearance this new forty-footer is as clean and trim as a torpedo boat; while the power equipment maintains in every way the high standard of Truscott efficiency and reliability.

Additional information and specifications may be obtained by addressing

National Boat & Engine Co.
Dept. A, 1212 Michigan Ave., Chicago, Ill.

Salesrooms throughout the Country

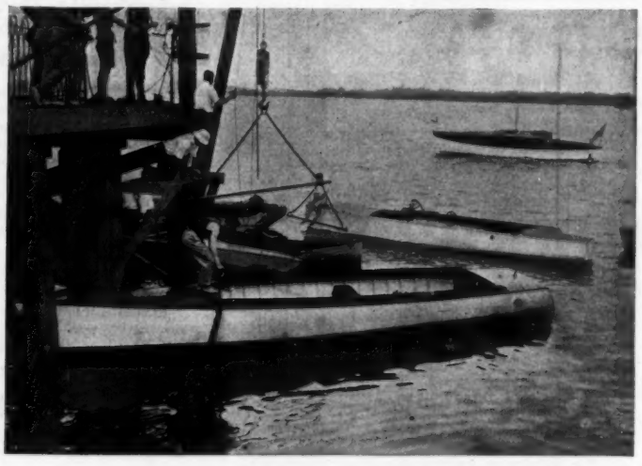




The course of the Long Beach Motor Yacht Club's races for the Long Beach Challenge Trophy, on Reynolds Channel.

already the ocean cruiser Iolanda of 1,647 tons; as a special tender to Elena he has a new twin-screw steamer of 141 tons, of 138 feet over-all length, designed by Charles L. Seabury and built by the Seabury Company, with two six-cylinder 11 by 12 Speedway engines. Enchantress is thus far a sailing yacht, but fitted for the ultimate installation of gas engines, and Karina is similarly designed. In the smaller division of the sailing fleet the additions are limited to the 31 feet and smaller classes, and are of little more than local importance. The power division, however, includes many new cruising yachts of all sizes, from 100 feet downward, practically all equipped with gas engines. The Register is but slightly larger than last year's, a very thorough revision resulting in the dropping of many old yachts. The book contains 468 pages and forty-five colored plates, the yacht list proper including over 3,500 vessels. The particulars of 472 yacht clubs and thirty-one associations within the limits of the United States and the Dominion of Canada and the West Indies are given, with the burgees of 456 clubs and associations. As closely as can be estimated there at the present time at least 600 yacht clubs within the territory mentioned, but many of the younger clubs in remote localities fail to reply to requests for the particulars necessary for their entry in the Register.

The list of yacht owners includes the names of 3,300 owners, with the full address wherever it can be obtained, as well as the clubs to which each belongs and a reference to the yachts which he owns.



Weighing boats on the Delaware River, showing the method employed in arriving at displacement by taking the actual weight of the boat in accordance with the latest ruling of the A. P. B. A. The boats are lifted from the water on slings hung from a scale. The operation can be performed rapidly, and the official measurer declared the method the best he had ever seen.

Power and Sail Boat Races to Cornfield Lightship and Return

The New Rochelle Yacht Club will start a race from New Rochelle to Cornfield Light vessel and return on Saturday, July 8, for power boats and sailboats for cups presented by YACHTING. While a number of races around Cornfield Light vessel have been sailed by the sailing yachts this is the first race for out-and-out power boats over that course, and should prove very attractive to boat owners.

The sailboats will be started at 11 a. m. and the power boats at 5 p. m. The following are the general conditions governing the events:

SAILING RACE

The race will be started off Echo Bay, New Rochelle. The line will be between the red spar buoy off Premium Point and the committee boat anchored south of same. Yachts will finish in the opposite direction from the start.

Course—From the starting line, off Echo Bay, New Rochelle, to and around Cornfield Light vessel, leaving it on the starboard hand, thence to finish line. Distance, 140 nautical miles. Buoys may be disregarded.

Rounding Cornfield Light—On rounding the lightship yachts must take their own time and report same to committee on finishing. No yacht will be entitled to a prize unless this rule is complied with.

Time Allowance and Rating—Time allowance will be given according to the rule of the Yacht Racing Association of Long Island Sound, based on the actual rating of each yacht.

Rules—Unless where otherwise stated, the rules of the Yacht Racing Association of Long Island Sound will govern. Crew certificates must be filed.

Crew—No restriction as to number of crew. The helmsman must be an amateur.

Prizes—In addition to the first prize presented by YACHTING other prizes have been presented by the club. A special prize will be given for handicap class if three or more handicap yachts start.

Entries—Entries will be received by G. P. Granbery, 29 Broadway, New York, 'phone 3890 Rector. Each yacht must give on its entry its racing length under the 1911 rule, racing number, rig, owners' name and club. No entry will be received later than twenty-four hours previous to the start. The time of no yacht will be taken unless the above is complied with.

POWER BOAT RACE

Course—From starting line between red spar buoy off Premium Point, New Rochelle, and the committee boat anchored south of same, to and around Cornfield Lightship, leaving it on starboard hand, thence to finish line. Distance, 140 nautical miles.

Rounding Lightship—On rounding the lightship boats will take their time and report same to the committee on finishing. No boat will be entitled to a prize unless this rule is complied with.

Measurement—Boats must be measured according to American Power Boat Association rule and certificate of rating filed with the committee not later than July 6, when entries close, with G. P. Granbery, 29 Broadway, New York.

Races for the Long Beach Challenge Trophy

The Long Beach Motor Yacht Club, which was recently organized at Long Beach, Long Island, will open its active racing season with its first annual regatta for speed boats on Saturday afternoon, July 15.

A very handsome prize has been offered in the Long Beach Challenge Trophy, valued at $300, and the event should attract all the high-speed boats on the south side of Long Island, as the club's course is within easy reach of any point on Great South, Hempstead and the other bays on that side of the island. Racing will be provided for two classes as follows:

Class A—High-speed race for automobile boats under 40 feet load waterline. The winning boats must show 20 miles an hour or no race. The course is 30 miles. All entering boats must be owned in Long Island waters. First and second prizes in addition to challenge trophy.

Class B—Handicap race for automobile boats under 40 feet load waterline limit. Time allowance as per A. P. B. A. rules of 1910. Winning boat must show 14 miles an hour or no race. Course, 20 miles. Boats must be owned in Long Island waters. In addition to challenge trophy there will be first and second prizes and third prize if entries number five or more.

Entries should be sent to Lawrence Perry, Room 201, 225 Fifth Avenue, New York, on, or preferably before, July 12. No entry blanks are required.

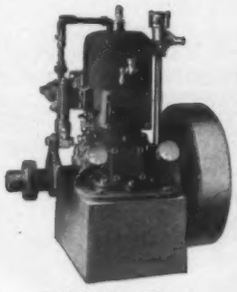
The Ideal Marine Motor
for pleasure and business

NO matter how classy the "lines" of your hull, it is the *motor* that drives the boat, and upon its competency depends your boating success. Judge carefully the individual merits of all the standard makes of motors, compare the WAYNE against the "field" and the WAYNE will eventually go into your boat.

SEND FOR WAYNE CATALOGUE

The University of Michigan have tested and tried the WAYNE MOTOR in the most severe service, and this Institution has only the highest endorsement. The WAYNE is the result of sixteen years of engine evolution. A motor that is non-vibrating; that has only one-third the moving parts of the ordinary motor; that is designed for concentrated energy; that contains the highest grade materials and workmanship—that's the WAYNE—the motor for *YOU*.

The WAYNE is built in one and two cylinder, and is rated at four and eight horsepower respectively. Don't fail to send for our beautiful 1911 Marine Catalogue to-day.



1 Cylinder Motor
4 in. Bore, 4 in. Stroke
4 H. P.

THE WAYNE MOTOR CO.
266 Jefferson Avenue, Detroit, Mich.

Experienced Boatmen Astonished at the Performances of the

LOEW-VICTOR ENGINE

IT'S the man who has had experience with other makes of marine motors who most appreciates the **LOEW-VICTOR**. The larger the number of other makes of engines he has tried, the more forcefully is he struck by the unusual strength, power, reliability, speed and durability of the **Loew-Victor**.

On the other hand, the novice, who has had no experience with marine engines, and naturally expects wonders of the first one he buys, finds himself delighted with the Loew-Victor because his every expectation is fulfilled.

NOTE THESE UNUSUAL SPECIFICATIONS

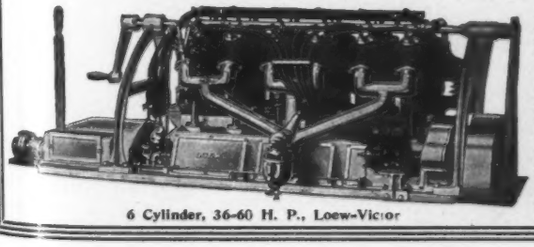
Two separate systems of ignition, operating on two separate sets of spark plugs, and deriving current from two separate sources. Battery and magneto, reverse gear, carburetor, automatic oiling system and air compressor, are included. The engine is furnished with this regular equipment only—no changes made.

Type of engine, 4 cycle; all cylinders "T" head type, with valves on opposite sides; water-jacketed manifold; die-cast, white bronze bearings; oiling system, automatic; the reverse gear furnished is of our own manufacture; plunger type water circulating pump; crank shafts on all regular models are so designed that each crank pin is supported between two main bearings. There is a Loew-Victor for every requirement. They are built in 1 cylinder, 6 H. P.; 2 cylinder, 12 H. P.; 3 cylinder, 18 H. P.; 4 cylinder (special), 20-30 H. P.; 4 cylinder (regular), 20-40 H. P.; 6 cylinder, 36-60 H. P.

SEND FOR THIS CATALOG

The Loew-Victor catalog is an unusual book, profusely illustrated, and containing much valuable information for those who are about to purchase their first engine as well as the experienced boatman who wants to end his engine troubles once and for all.

THE LOEW MANUFACTURING COMPANY
9189 MADISON AVENUE, CLEVELAND, O.



6 Cylinder, 36-60 H. P., Loew-Victor

Allan W. Fulton & Co., 514 E. Pratt St., Baltimore, Md.; Wallace Bros., Norfolk, Va.; Harry D. Gates, c/o Fairfield Auto Co., Bridgeport, Conn.; Carman & Bowes, Bourse Building, Philadelphia, Pa.; C. Frank Moore, 220 Devonshire St., Boston, Mass.; Bowler, Holmes & Hecker Co., 141 Liberty St., New New York City.

If you own or run a motor boat read this

Carbon deposit in the cylinders is responsible for more motor repair bills than any other one cause.

Do you thoroughly understand the cause of carbon deposit?

The explosions in the combustion chambers burn up the lubricating oil left on the cylinder walls. Most oils in burning leave a hard residue—carbon deposit.

It is a trouble maker. It fouls the exhaust valves, spark plugs and piston rings.

The carbon cakes on the piston head and becomes red hot. Premature explosions follow. They rack the engine, loosen the bearings of the crank shaft and connecting rod, and cause pounding.

Occasionally the carbon deposit chips off from the piston head and grind between the piston rings and the cylinder walls. This scores the cylinder walls.

For years we have been laboring to eliminate the carbon-forming elements from lubricating oil. The result is Polarine.

Polarine

Polarine is the most efficient gas engine lubricant yet produced.

IT LEAVES NO APPRECIABLE CARBON DEPOSIT. Its consistency or "body" is not materially affected by either high or low temperature. As an automobile lubricant it is in a class by itself.

The Polarine brand covers: POLARINE OIL, sold in sealed cans, gallon and five gallon sizes; or in barrel and half-barrels.

POLARINE TRANSMISSION LUBRICANTS, for transmissions and differentials, in cans of convenient size; also in barrels and half-barrels.

POLARINE FIBRE GREASE and POLARINE CUP GREASE, the former of high melting point, especially adapted to use on universal joints. Sold in round cans.

All dealers sell Polarine Lubricants or can get them for you.

If you own a motor car or motor boat, send for our booklet, "Polarine Pointers." It includes hints on lubrication and the causes of motor troubles. Write our nearest agency.

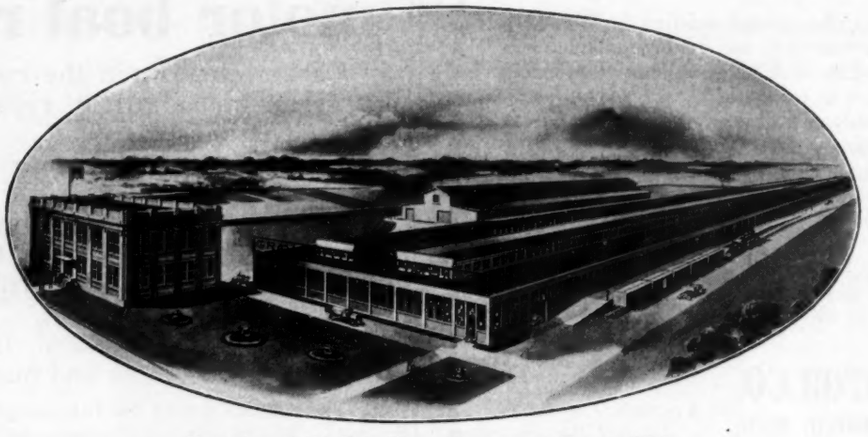
Standard Oil Company
(Incorporated)

Of Interest to the Skipper

Where Economy is Expensive Most of the boats are now overboard, looking spick and span in their new paint, and a considerable bunch of hard stolen wealth has gone into outfitting them. Those of us who have come to realize that peace of mind is something really worth procuring at a moderate expenditure are not doing much worrying about our boats going ashore when the blows come, because we're riding to Fairhaven Bulb Shank mooring anchors that "stay put." The thing that does worry us is the gentleman afflicted with tight-wadism and mistaken ideas of economy, who hitches his boat up to a junk pile and takes chances that when she goes adrift some kind-hearted Samaritan will rescue her and forget to put in a bill for his services.

This short-sighted individual doesn't appreciate that the damage which may be done to his boat or which he may do to the other craft when the junk pile starts on a marathon, would pay for several bulb shank anchors and leave quite a few dollars over for the right kind of a mooring chain. Of course, the experienced boat owner is insured, but there's no fun in losing a week or two of the use of one's boat while repairs are being made.

So it's up to every boat owner who's using a Fairhaven Bulb Shank Anchor, and knows just how good it is, to start a crusade against the ineffective moorings that so many of his neighbors are using, through the general method of demonstrating that a bill for repairs, either to the economist's own boat or to some other boat with which it has collided, is a much larger item than the cost of the right kind of mooring.



New plant of the Gray Motor Company at Detroit, Mich.

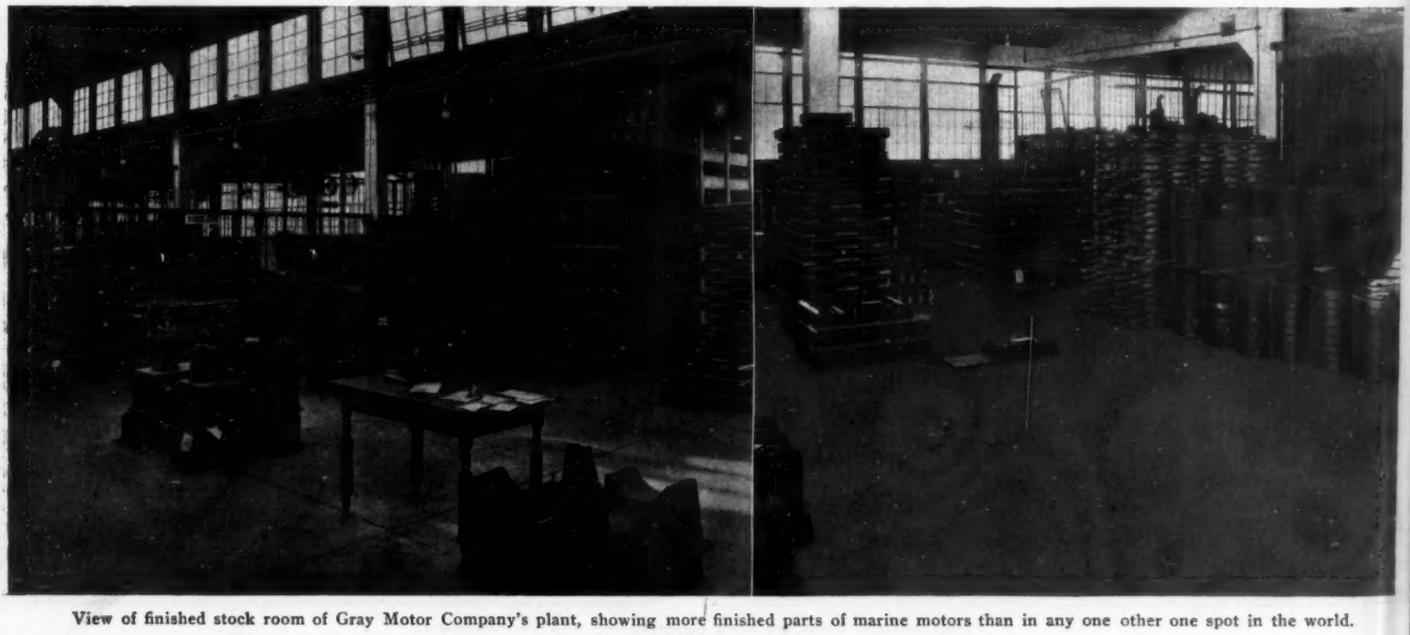
"A Visit to a Great Plant" This is the title of a booklet just issued by the Gray Motor Company, of Detroit, Mich., in which are illustrated and described the new mammoth Gray plant and the various processes through which Gray motors pass before they are ready for shipment.

The Gray Motor Company takes the logical ground that the prospective purchaser is vitally interested, not only in knowing how his motor is built and finished, but also the capacity of the plant manufacturing it and the maker's ability to make prompt deliveries, as well as the magnitude and responsibility of the manufacturing company, which latter factor has considerable bearing on the purchaser's ability to procure repairs economically at any time in the future. To those who have passed through the unpleasant experience of purchasing a motor because it was cheap, and after a couple of seasons' use discovering that the manufacturers thereof had spread their wings and disappeared from the face of the earth, leaving the motor owner the expensive procedure of having his repair parts built to order as a special job, the facilities and size of the Gray motor plant will be appreciated as a mighty good insurance against a repetition of the aforesaid experience. The booklet is handsomely illustrated in half-tones, a few of which we reproduce herewith, and every prospective purchaser of a two-cycle engine will do well to write the Gray Motor Company, of Detroit, Mich., asking them for a copy, which will be cheerfully sent, postage prepaid, if the applicant will state that he is a reader of YACHTING.

Gordon Propeller's New York Home The Gordon Propeller Co., whose reversible and interchangeable blade propeller awakened so much enthusiasm at the New York Show, has found New York so appreciative of the good points of their device that a New York sales agency has been opened in Room 804, World Building, in charge of H. C. Cushing, Jr. Mr. Cushing is an enthusiastic motor boat owner of half-a-dozen years' standing, and knowing just what is required by the fraternity in the way of a reversible propeller, he is most admirably adapted to demonstrate the many splendid points of the Gordon, and we sincerely congratulate the concern on having secured his services.

For Waterproofing Canvas and Airtight Compartments There is often a great demand for a waterproof canvas for tops of cabins, permanent awnings, canvas decks, etc., and any substance that will serve to render canvas watertight and airtight is of value to the boat owner. Jeffery's Patent Marine Glue has long been used for these purposes and is one of the best substances to be found.

The glue for this purpose is of a softer quality than that used for batteries and yachts' decks. After being melted over a moderate fire, spread the glue on the surface of the wood or iron with a stiff wire-bound brush, leaving on a good body; lay the canvas on the glue and pass an ordinary



View of finished stock room of Gray Motor Company's plant, showing more finished parts of marine motors than in any one other one spot in the world.

MERIDEN

Cups and Trophies

WHETHER it be a cup or trophy to be raced for at the regatta of the big club, or a suitable prize to the winner of the weekly race given by the smaller club, Meriden Cups and Trophies are most appropriate. In every sense of the word they reflect the true spirit of the race, and the generosity of the donor. Our variety of designs, from the most elaborate, especially designed sterling cups to the more modest ones in silver plate, copper and pewter, is most varied and complete.

Send for illustrated catalogue.

THE MERIDEN COMPANY, *Silversmiths*
(International Silver Co., Successor)
49-51 West 34th Street
and 68-70 West 35th Street
NEW YORK

Install a Motor in Your Canoe

Waterman K-1 Outfit

With comparative ease anyone can make a motor boat out of his canoe with our new shaft log and canoe motor and outfit.

Just what you have been looking for—a light weight, powerful canoe motor and outfit ready to install in any canoe. You can't buy a better marine motor than the Waterman; it carries a life guarantee. This motor installed in a canoe will give you a speed of from 8 to 10 miles per hour. Anyone can in a few hours install this reliable power plant in any canoe. The price is remarkably low. Our aluminum shaft log does away with the only hard part of installing motor. Get our catalog, which fully describes this remarkable outfit. Write for literature today.

Aluminum Shaft Log for Paddling Canoes

WATERMAN MARINE MOTOR COMPANY
1541 Fort Street, West DETROIT, MICH.

Perfex

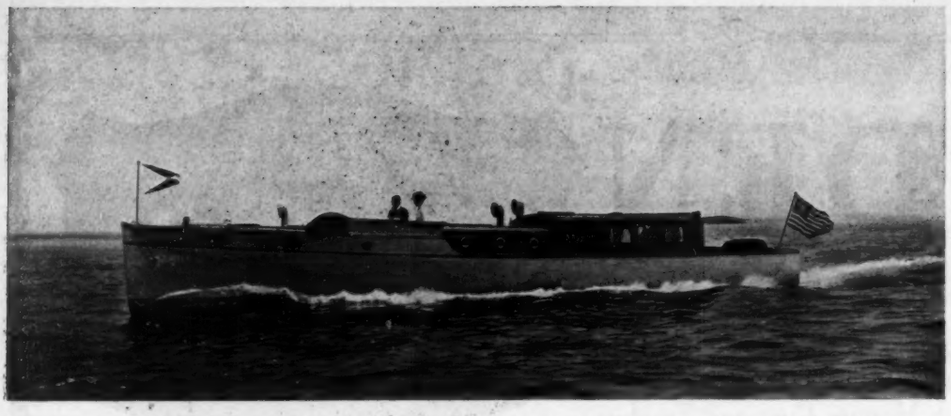
A Jump Spark System, sold with an absolute guarantee that at least ten per cent. more power will be secured than from any Jump Spark Box Coil, or money refunded.

POWER-ADDING
WATER-PROOF

All parts of the System, Ignitor, Master Vibrator and Wiring guaranteed to withstand moisture in any form or volume. Other features, Detachable Pole Reversing Vibrator, Reliance Separable Spark Plug. Practically no metal parts to rust or tarnish

ELECTRIC GOODS MFG. CO.
Lake Avenue, CANTON, MASS.

Ignition



Gee Whiz, Mr. Lawrence F. Percival's 50-footer, which makes 18 miles an hour with a 60-H. P. Heavy-Duty Sterling Engine.

hot flatiron over the canvas and make the glue *sweat* through, taking care not to have the iron so hot as to *scorch* the canvas. (Experience will immediately show the heat required.) Another way of application is to coat the canvas on one side and lay it glued-side downwards on the wood or other substance requiring to be covered, passing the iron over as before —the canvas will then be found perfectly waterproof and adhering tightly to the wood, etc. In the course of a few minutes a thin coating of glue over the canvas may be added (if desired) and the iron again passed lightly over it. The canvas can then be painted.

No canoeist should be without a can of this glue, as it is invaluable for quick repairs on either canvas or cedar canoes.

A Speedy 50-Footer Mr. Lawrence F. Percival, of Boston, has in his new boat, Gee Whiz, a photograph of which is shown here, one of the notable boats of the year. Gee Whiz was designed by A. P. Homer, of Boston, Mass., and is 50 feet long by 8 feet beam. A 60-horsepower, heavy-duty Sterling engine drives her 18 miles an hour. This boat was designed for a fast cruising and day boat, and shows many novel and attractive features.

A Yachtsman's Friend This summer will see an unusual number of sailing and motor boat races of particular interest on the waters of the Eastern and Pacific coasts. Boat owners have frequently regretted that they could not follow these events properly, either with naked eyes or with the old-style field glasses they owned, and thus the races have been robbed of a great deal of interest and pleasure. To those who now wish to get the full enjoyment of life aboard a yacht, a new prism binocular, as recently brought out by Ernst Leitz, of Germany, will be found a great addition to their outfit as well as a great help in misty weather or at night, as the binocular is also a good night glass.

New Prism Binocular for marine use. Made by Ernest Leitz.

This new glass has an immense penetrating power, an exceedingly large field, a marvelously sharp definition of the entire image, and a great rigidity, thus making it an extraordinarily good marine glass—in fact, it is built in accordance with navy standards. As the glasses are moisture, dust, cold and heat proof, they are a very desirable and, in fact, almost a necessary adjunct to other nautical instruments of boat owners. These glasses may be obtained at the New York office of Ernst Leitz, 30 East Eighteenth Street, New York City.

An Economical and Satisfactory Engine Probably the best salesmen of a gasolene engine are the satisfied users of that particular motor, and their unsolicited praise and testimonials always carry much weight. The makers of the Strelinger marine engine are particularly fortunate in this respect, as some of the following letters and comments received by that company will show. These are only a few of the many on file at the maker's office.

The owner of a Strelinger at Prince Rupert, B. C., writes that his engine has not caused him to lose a trip during the entire winter, while many other boat owners have been obliged to lay up during the cold weather on account of the unreliability of their engines in freezing temperatures. He has had many visitors aboard his boat admiring his power. He says: "Give me a Strelinger every time!" This man carries mail from Prince Rupert, B. C., to Digby Island Marine Station, and consequently must have a reliable engine.

Another owner of a Strelinger at Duluth, Minn., says: "I have used my engine for seven years, and have just taken it apart this fall. I found every part in most excellent condition. All bearings are in perfect condition, and I feel that I have the very best engine on the market."

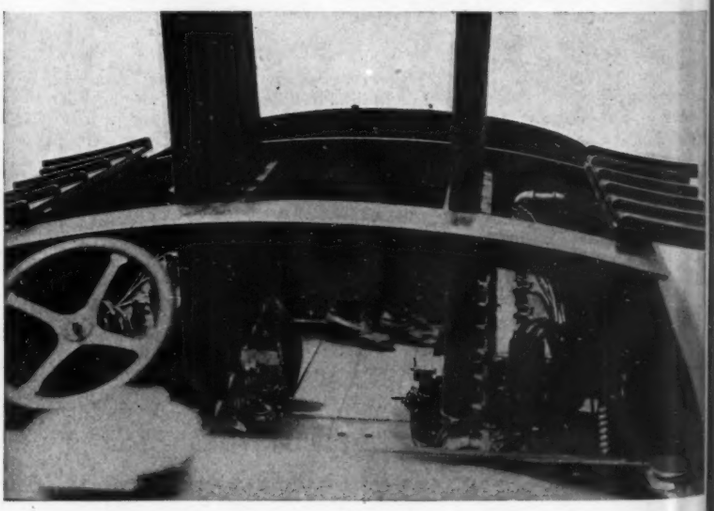
In considering the Strelinger a heavy-duty engine, actual tests are much more convincing than any recommendation made by a manufacturer. The following is an example of how the Strelinger shows up in comparison:

On Saturday, August 27, 1910, at 10 p. m., a fleet of four power boats from 33 to 43 feet in length left Charlevoix, Mich., for Gloucester, Mass., where they spent the winter in the fishing industry. This fleet stopped in Detroit on the morning of September 1, 1910, where they took on a lot of supplies, among which was 800 gallons of gasolene. The owners and captains visited the factory of the Strelinger Marine Engine Company, and Captain Anderson, of the launch Hope, placed an order with the Strelinger people for one of their four-cylinder, 30 to 40-horsepower Strelinger engines, which he installed in the launch in place of the one he had been using. During the conversation the question of gasolene was under discussion, and it was ascertained that the three-cylinder Strelinger used 135 gallons of gasolene on her run from Charlevoix to Detroit, while one of the other engines in the fleet, with not as much horsepower and in a smaller boat, had consumed 300 gallons. This is quite interesting, inasmuch as the manufacturers of this particular engine have a great deal to say about the economy in the consumption of fuel on their engines. These launches, properly speaking, are fishing tugs, as they are heavily built and full cabin, having from 10 to 12 tons capacity, and built with a view of withstanding the storms of Lake Michigan. Each of these launches has been in the fishing industry for several years.

There are, perhaps, not less than 300 Strelinger engines in service within 50 miles of Detroit, every one in almost constant service for seven or eight months of each year, and they always give the owners the best of satisfaction.

Recent shipments made by the Strelinger Marine Engine Company includes one of 12 horsepower to Riga, Russia; a 6 to 9 horsepower to Denmark; two 30 to 40-horsepower engines to Central America; four 4 to 6-horsepower engines to Amsterdam, Netherlands; a 12 horsepower to Australia, and one 40 horsepower to the Great Lakes Engineering Company, to be used in their Ashtabula, Ohio, yards in place of a steam engine, removed.

An Emerson Installation The Emerson Engine Company, of Alexandria, Va., have recently startled the motor boat world and set the pace of the summer by turning out a 26-foot boat that did better than 42 miles an hour over a measured course. This little boat, called the Furlong, carries 200 horsepower in two Emerson motors of 100 horsepower each. The accompanying photograph shows the installation of these motors, and gives a good idea of the room there is in the little boat, there being ample space between the two motors to do any necessary work without being a contortionist. There is also plenty of room to walk forward between the motors instead of climbing over them.



Installation of Emerson Motors in 26-foot speed boat Furlong, which recently made 42 miles per hour.

If Your Boat Runs on the Rocks—

are you protected? Insure yourself against loss or damage by a policy that covers burning, sinking, collision, running on the rocks, and the usual risks of a boat owner. A few cents a day may save you hundreds of dollars. Write for particulars.

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Surplus to Policy Holders, over $7,000,000

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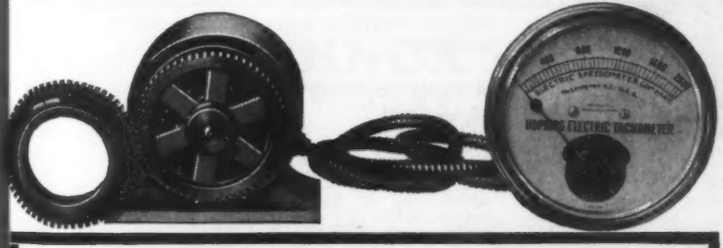

Indicates Engine Speed at ANY Point in the Boat

The Hopkins Electric Tachometer consists of a small water-tight magneto geared to propeller shaft, and an indicating meter installed in engine room, cabin, chart room, on the bridge, or wherever you please. No troublesome flexible shaft or belt is used—operation is entirely electric.

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"No Flexible Shaft"

indicates accurately and steadily in any weather or temperature. Noiseless in operation, sturdy in construction and beautiful in finish.

Hopkins Electric Tachometer, with zero center scale calibrated "ahead" and "astern," indicates engine speed in either direction, and also enables pilot to instantly check his signals to engine room.

Used by U. S. Navy

Complete outfit, as illustrated, with gear, magneto, armored cable and indicator, **$75**

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"Leaders of Quality"
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Natoma, a 40-foot launch with a 90-H. P. Buffalo engine that made 30.38 miles in one of her first trial trips.

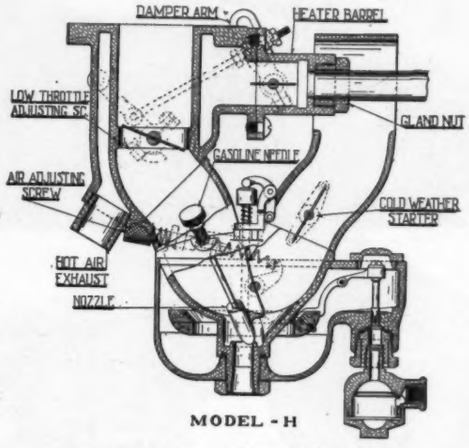
A New 30-Miler We reproduce herewith a photograph of the new high-speed boat Natoma, that is expected to "do things" this summer. She is owned by Clifford V. Herbert, son of Victor Herbert the composer. The boat is named after the elder Herbert's latest opera, and, translated, means Mountain Maid.

Natoma is 39 feet 11 inches long, with 5½ feet beam, and draws 2 feet 9 inches at the wheel. She is equipped with a 90-horsepower Buffalo high-speed engine. The hull was designed and built by Stearns & McKay, Marblehead.

The second day after she was launched Natoma did 29 miles an hour with a wheel designed for another boat. Later, with her own wheel, she turned up 30.38 miles.

Mr. Herbert is ready to race all comers for the championship of the Adirondacks, and he will also enter the Gold Cup races on the St. Lawrence. He intends to promote a 200-mile free-for-all race on Lake Placid this summer, which will no doubt be of interest to motor boat owners.

A Carburetor of Great Flexibility and Range Nothing is as essential to the easy and safe management of a power boat as ability to slow down and speed up the engine as desired. This is often a hard matter, as many engines do not run well when turning over but a small percentage of the revolutions at which they are designed to run. There is, however, a carburetor on the market which the makers claim will accomplish this thing. This is the Marvel carburetor, manufactured by the Marvel Carburetor Company, of Indianapolis, Ind. This carburetor was designed and invented by Mr. Pierce, the original collaborator of the best-known carburetor on the market. His broad experience in that work has enabled him to produce a carburetor that has a feature putting it in a special class. The Marvel has a jacket taking hot gas from the exhaust, and this jacket is throttled and so arranged that on low speeds and on starting up when one needs the heat most, the heat is right there on the job—decreasing as engine throttle is opened. Not only is it possible with the Marvel to allow the engine to run at a speed at which it always stalled before, but with it one can practically add 100 revolutions to his engine. The trick lies in the ingenious method by which a throttle governing the amount of hot gas admitted to heating jacket is connected to the throttle proper of the carburetor; and from the fact that the hot gas from exhaust instead of hot water is used for warming the mixture. Exhaust gas is hot from first explosion, while water requires time to heat. Continual heating of the carburetor, while keeping it at high speed, is of no particular advantage; in fact, is often a detriment. Heating it at low speed (closed throttle) is an advantage, and a big one, and that's where the Marvel gets the most out of even the lowest grade of gasolene.



Sectional view of Marvel Carburetor.

A Marvel practically adds a low and a high gear to the engine, and, moreover, allows the use of the boat late in the season without any danger of being obliged to heave-to while the vaporizing outfit is thawed out.

Further information concerning this carburetor can be had by writing the Marvel Carburetor Company, 2240 Alvord Street, Indianapolis, Ind.

A Scripps 26-Foot, 30-Miler The accompanying photograph shows in action a little 26-foot boat that since her launching has caused quite a sensation on the Pacific Coast. She is owned by Nunes Bros., of Sacramento, Cal., and has been christened Nunes Flyer.

She was built last fall by her owners from lines laid down by the firm of Tams, Lemoine & Crane, of New York City. Her length is 26 feet over all by 4 feet beam, and it can readily be seen that she bears all the earmarks which have characterized the many famous boats designed by this firm, such as plumb stem and stern, pronounced flare at the bow, with sides sharply tumbled home at the stern, and a highly crowned deck.

The little flyer's power plant consists of a four-cylinder 6½ by 6 Scripps motor, fitted with auxiliary exhaust ports and developing an honest 80-horsepower at 1,100 revolutions per minute. This motor drives a wheel, especially designed by Mr. Crane, of the true screw type with three full elliptical blades, having a diameter of 19 inches by 33½ pitch.

While as yet this little craft has not competed in any races, and hence has no official record, Nunes Bros. have been putting her through severe tryouts all spring, and it is reported that they have had no trouble in making 30 miles an hour. Naturally her owners are anxious to match her against other fast boats of her class, and have issued many challenges, including one to Fighting Bob II, which up to the present time has had things her own way on the Coast.

An Attractive Engine Catalogue The Loew Manufacturing Company, of Cleveland, Ohio, makers of the celebrated Loew-Victor four-cycle engine, have recently issued their 1911 catalogue. This is a very attractive volume, giving in detail the construction and principle of the Loew-Victor engine, with the dimensions of the various parts, the prices of the different sizes, etc. Power boat owners will be particularly interested in this catalogue, which the Loew Manufacturing Company will send free of charge to any one writing for same and mentioning this magazine.

A Popular Ignition Outfit In spite of the fact that its manufacturers, the Electric Goods Manufacturing Company, of Canton and Boston, Mass., makers of the Perfex Waterproof Ignition System, have quadrupled their output capacity for this year to take care of their rapidly-increasing sales, which the company says were five times as great in 1910 as in the previous year, the large advance orders they have received, and the increasing popularity of the Perfex Waterproof System, have led them to believe that only those who get their orders in early will be able to enjoy a Perfex outfit this season.

The fact that 50 per cent of all the engine manufacturers at the New York Show exhibited motors equipped with Perfex ignition is a sure indication that power boat owners in general are fast coming to the point where they insist on an engine that is equipped with ignition that is absolutely waterproof.

The new Perfex "Rectified" low-tension magneto enjoyed a large sale at the New York Show, and is being welcomed by all battery and low-tension magneto users as the solution of their troubles.

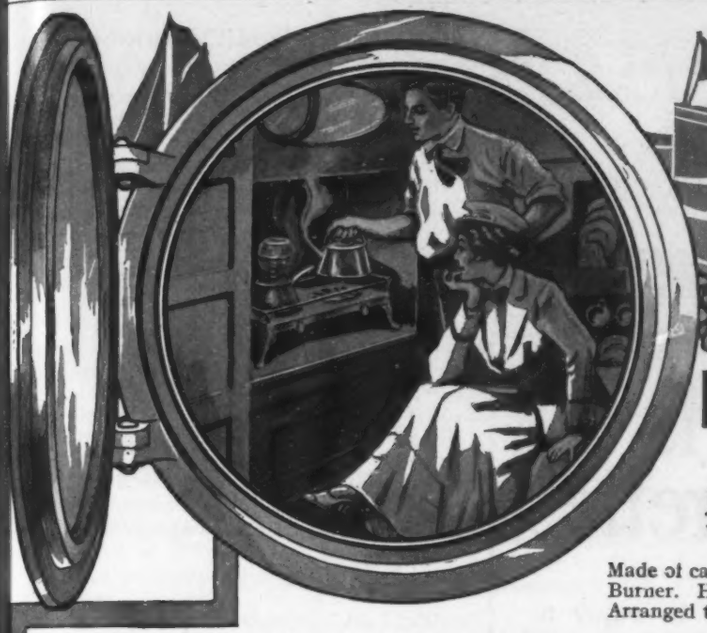
A Good Company to be With The following was written to the Insurance Company of North America by Dr. William E. Spencer, of New York City:

I take this opportunity of writing to express my appreciation of your very prompt settlement in the matter of loss and damage to my yacht Yankee II, insured under your policy No. 72,648, while bound from Miami, Fla., to New York; and also for the courteous treatment from your Capt. Evalde, while going over the matter of adjustment. While this is the first marine loss, and I do not write from personal experience, the fact that your adjuster came aboard of the boat Saturday, May 27, and my inventory went forward on Monday, May 29, and your check was received June 3 (May 30, a holiday, intervening), certainly speaks well for your business organization and rapid means of inspection, and it will be a pleasure for me to recommend your company to boat owners.

Beware the Inspector This year Uncle Sam's inspectors appear to really mean business, and the way they are going after skippers of improperly equipped power craft is a warning to follow the regulations to the letter.

One of the items on which the officials are particularly keen is a proper fire extinguisher equipment, and those motor boat owners who are not so provided will do well by sending at once to the Pyrene Manufacturing Company, 1358 Broadway, New York City, for a copy of their handbook on the Pyrene Fire Extinguisher, which will be sent free to those mentioning that they are readers of YACHTING.

Nunes Flyer, a 26-foot speed boat with an 80-H. P. Scripps motor that has no trouble in making 30 miles an hour.



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MAINTAINS A UNIFORM HEAT REGARDLESS OF VIBRATION OR UNSTEADINESS OF BOAT

Made of cast iron, galvanized, absolutely rust-proof, with Brass Burner. Has galvanized railing to prevent dishes from sliding. Arranged to securely fasten to table or shelf.

No. 111. "Pyro" One-Burner Marine Stove. Over all dimensions, 14x16 in. Height, 14½ in. Plate dimensions, 10½x10 in. Weight, about 12 lbs.
No. 112. "Pyro" Two-Burner Marine Stove. Over all dimensions, 12½x24½ in. Height, 14 in. Plate dimensions, 11x20½ in. Weight, about 21 lbs.
No. 113. "Pyro" Three-Burner Marine Stove. Over all dimensions, 16x30 in. Height, 16 in. Plate dimensions, 11¼x31¼ in. Weight, about 27 lbs.

RANGES BUILT TO ORDER. PRICES ON APPLICATION

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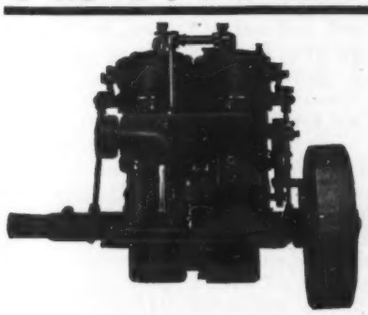
THE ALCOHOL UTILITIES COMPANY, 40 East 21st Street, New York

Our 1911 KNOX is the Best Motor we have ever produced



—certainly worthy of your investigation, considering they have been in successful operation for over twelve years.

With our model "D" Carburetor they will operate successfully on Gasolene, Kerosene, Distillate or Alcohol. Sizes 3 to 40 H. P., two and four cycle. Make and Break or Jump Spark ignition.

The Proper MOTOR for the Commercial Boat or Cruising Launch

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IF you've tried and failed to enjoy a PHILIP MORRIS the answer is simple. You've never smoked the size that suits your taste. Different size in cigarettes produce a different taste. If you want Turkish tobacco, and nothing else, perfectly blended in a sunlit, sanitary, Government inspected factory, get the size PHILIP MORRIS that suits your taste and stick to it.

If your dealer does not stock your particular size, send us his name and address and remittance for desired samples.

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PHILIP MORRIS & COMPANY, Ltd.
410 West Broadway New York

FACTORIES:
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Cairo

The "Lady Maud," Schooner Yacht

(Continued from page 46)

makeshift to get away on a raft, and leave the rest to Providence. No vessel is likely to come near these waters. The proper channels will be leagues away on either side."

"The water looks open out yonder," replied Tripshore, pointing into the northeast. "If we be in the midst of them shoals you speak of, they'd be showing all around."

"What part of these cussed islands we're cast away on, I don't know," said Hunter, "but whatever may be your detarmination, Mr. Walton, mine's this: I'm not going to sit down on this here rock and wait for something to happen. I don't say nothen'll come of that there raft we sent adrift this morning; but meanwhile there's wood enough left to build a machine that'll float two men. I'm agreeable to go to work upon it, and when it's built, if no one else'll join, then, if you'll give me three days' allowance o' wittles, I'll put off alone and see what's to be found. Ye'll be discovering soon that it'll be better to take your chance o' drowning than stopping here."

"I don't see my way to that——" said I.

"But I do," he interrupted.

"Because," I continued, determined not to notice the man's mutinous manner, "we cannot construct a raft that will not be absolutely at the mercy of the wind. If we could reckon upon a north or an east wind blowing steadily for a week or so, then, indeed, our raft might drift to some inhabited shore. But the chances are almost all against us. The first bit of sea that got up would sweep us off the raft like chaff. Or we might be blown into the Atlantic without sighting a vessel, and wretchedly perish there."

"But what's to be done, then?" he asked, fiercely. "Are we to stick here till we rot?"

"We must wait a little," I answered. "Give that raft we have sent adrift a chance. Or that smoke we are making may be seen. Some safer means of escape than a raft may offer. If nothing turns up, then we must come to your remedy."

He muttered something under his breath, turned on his heel, and walked off, and he sullenly kept in advance of us the whole way across the island.

As we rounded the bushes which brought us within view of the place where Lady Brookes lay buried, we saw Sir Mordaunt at work upon the grave. I left Tripshore and went to him, and on drawing near I perceived that he was framing the grave with pieces of rock. He took my hand in both of his, and pressed it affectionately.

"That is hard work for you," said I, pointing to the pieces of rock he had collected.

As this was his wish, I said no more, and went to the hut to rest awhile. I noticed Hunter on the beach, standing near the remains of the wreckage there, and looking about him, as I supposed, to see if anything more had come ashore. Under the trees, and to the right of the hut, was Tripshore operating upon the turtle, Carey looking on. I had given this job to Hunter, but it did not signify who performed it; and if Hunter was searching the beach, he was well employed.

Inside the hut I found Miss Tuke kneeling on the sail, making cakes. Her sleeves were rolled above her elbows, her hair was rough, yet I never admired her more than I did then, and I thought it impossible that any posture should suit her better. I sat down near the plank on which she was molding the cakes and told her what we had been doing, and how I had left her uncle employed.

"He thinks of nothing else," she answered mournfully. "He seems to forget that we are shipwrecked, and may never escape from this dreadful island; and *how* are we to get away?" said she, pausing in her work, and looking me full in the face.

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SPEED AND MEDIUM DUTY

High speed types, 4 and 6 cylinders; 40 to 80 H. P.
Medium duty types, 2, 4 and 6 cylinders; 12 to 50 H. P.
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Means first quality in Marine Gasoline Engines. They are Reliable, Durable, and consume Less Fuel than any other Marine Motor made. Prices and terms will please you. No matter what size engine you wish, it will pay you to read our catalog before placing your order elsewhere.

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A "GURNET" DORY OFF COAST OF MAINE

Shallow draught Noiseless. Non-Capsizable Safe for off-shore boating; desirable anywhere.

16 to 30 feet

State requirements, and specifications of the boat desired will be mailed.

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CLEARANCE SALE OF

EXTRA BOATS AND PARTS

Hunting Cabin Cruiser, 40 x 10 x 3, of heavy construction, Matthews hull, 40 horse, 4 cylinder Medium Duty Speedway Engine, which cost $1,800.00. Installation of engine and all fittings under supervision of Gas Engine & Power Co.

This boat has a $200.00 Dayton Electric Light Equipment, Acetylene Auxiliary Light, extra light globes.

There is a fine 10 gallon Sight Feed Copper Oil Tank hung in engine room, with filling cap connected on deck. There is a brass pipe railing around engine, with a full leather cover over engine.

There is one extra wheel which has never been used and one fine Auxiliary Bilge Pump: A pair of boarding steps, life preservers and life buoys.

This boat has two state rooms, toilet room, engine room and galley. It has drop windows, hatches and doors all screened; the best of Wilton Velvet Carpet and Silk Velour Curtains in state rooms; is finished in Mahogany throughout. Fine Mahogany Dining Table; large Mahogany Steering Wheel, compass and binnacle. There is a double railing and lounge cushions on deck.

This boat has double gasolene tanks set in precaution pans with drain overboard; full leather cushions in cockpit, a brass pipe awning over cockpit; 250 gallon water supply.

The furnishings include new ropes, two anchors, 30-in. copper ventilating cowls, port air scoops, fine brass lamps, one 10-ft. $80 Mahogany Dinghy, tools, etc.

The boat is complete in every detail and is in perfect condition. Was brand new and launched in December, 1910. It has just returned from Florida and is now in New York being painted. The owner has a 90-ft. boat to be delivered May 1st and has no further use for this one. Cost $7,000 complete; will sell for $4.500.

Is also equipped with air tanks under floor, making the craft non-sinkable.

One 16-ft. Old Town Canoe, built in air plylons, making the canoe non-sinkable; 3-ft. beam, 2 cylinder Waterman motor; beautiful canoe, had less than six weeks service, makes 12½ miles per hour; cost $300. Price $200 F. O. B cars Miami, Fla., or $225 delivered.

One, 35 ft. x 6 half glass cabin Speedway hull, fitted with 20 horse power 4 cylinder Truscott engine. Has drop plate glass windows; large cockpit, fine leather cushions, small gallev· over 100 gallon gasolene capacity in copper tanks with drain pans overboard; air tanks under floor, making it non-sinkable. This outfit is in beautiful condition, does not need a drop of paint or a nickel's worth of work. Splendid bargain at $2,000. Now located on storage at Gas Engine & Power Co.'s Yard, Morris Heights, N. Y.

One, 38 ft. x 5 beam Gentleman's Semi-Speed Runabout, built by the Matthews Boat Co. Mahogany interior, sliding hatch over engine, fitted with gasolene tanks, air tanks under floor, brass lined engine compartment, leather upholstered seats, shaft and wheel, Bilge pump, gasolene line all connected ready for installation of engine.

Cost $2,300, used less than a week, not a scrtach on this hull. Price $1,000. Is now at the Gas Engine & Power Co., Morris Heights, N. Y.

One, Truscott Medium Duty Engine, without clutch, size 6-in. bore, 7-in. stroke, 6 cylinder, at 1,000 revolutions, rated at 80 to 100 H. P., Bosch magneto, Schebler carburetor. Engine is brand new. Price $750.

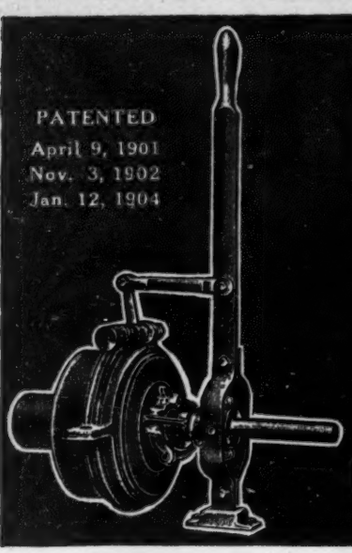
One, Carlisle-Johnson Transmission in aluminum housing for 50 H. P. engine, used six months, but is in perfect condition. Price $75.

One, Elbridge 4 cylinder 2 cycle 40 H. P. Marine Motor, complete, brand new, never installed. Cost $1,000. Price $700.

One, National 6 cylinder engine 4¼ x 5 with Bosch magneto, Schebler carbureter, special finish, guaranteed to be perfect in every respect, was used less than thirty days, $750. This engine develops 55 to 60 H. P., at 1,000 revolutions.

Any of the above boats or parts will be shipped on payment of sufficient amount to cover freight charges, balance subject to inspection.

CARL G. FISHER, INDIANAPOLIS, IND.



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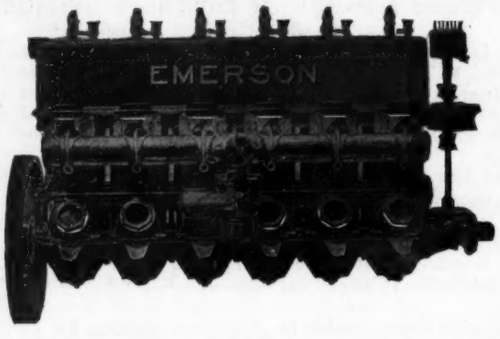

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WRITE FOR PARTICULARS

The Emerson Engine Co., Inc., ALEXANDRIA, VIRGINIA, U. S. A.
NEW YORK BRANCH—1737 BROADWAY, NEW YORK

I could only repeat what I had said before—that we must hope the smoke of the fire would be seen, or the raft with our message upon it encountered.

"It will not take us long to burn all the bushes on the island," said she; "and then how shall we be able to make a fire? And how many days will you grant before supposing that the raft has disappeared without any ship having seen it?"

"What *can* we do if we are forbidden even to hope?" I replied, tormented by these questions, which only too accurately interpreted my own feelings. "The bushes are not all burned yet, and the raft has been gone only four or five hours. We must be patient, and have faith in God's goodness. Who knows what a day may unfold?"

She had too brave a soul to go on murmuring, yet it was clear that she understood our situation as accurately as I, and that she could not look away from the immediate present without her heart fainting in her.

"If the worst comes to pass," said I, "if, after waiting, we see no prospect of relief, then, before our food fails us, we must turn to and pull this hut down, and make as big and strong a raft as we can manage. But that alternative, as I have told the others, is so full of danger that before adopting it our extremity should be greater than it is, and our patience all gone."

As I said this, Hunter put his head into the hut, and said there was a wooden case come ashore. It was too large for him to carry alone. He wanted to know where Tripshore was.

"I'll give you a hand," said I, jumping up; and I followed him to the beach.

It was a large whitewood square box, and glanced among the ripples which rolled up the beach. It lay close to where we had launched the raft. We waded into the water and hoisted it out of the sand, and conveyed it to the hut, where we pried open the lid, and came to a casing of tin. This we cut, and found the case full of biscuits which had been perfectly protected from the water by the tin casing.

I called to Miss Tuke to come and look, and told her that every discovery of this kind improved our chances of escape, by enabling us to give the raft more time to do its work.

"I for one sha'n't stop for that, Mr. Walton," exclaimed Hunter. "I've been overhauling that wreckage down there, and there's stuff enough for my purpose."

"What do you mean to do?" I asked.

"Build a kind of catamaran," he replied, "and take my chance alone if nobody'll come with me."

"You can do as you please," said I, noticing the obstinate look in the man's face; "nobody will stop you. You're a sailor, and don't require any one to point out the risks you'll run."

Just then Mrs. Stretton and Norie arrived, the latter sweating under the kettle, that was full of salt meat, from which the steam was soaring in clouds. Tripshore, hearing our voices, also came round to where we stood, and listened, with the gleaming knife with which he was operating on the turtle forking out of his hand.

"All hands being here, saving Sir Mordaunt," said Hunter, folding his arms and looking around him, "I'll put my case. Here we are, imprisoned on a island. Where it is no one knows. Two blessed days we've been here, and ne'er a sail have we seen. My belief is that if we was to stop here twelve months, we'd see nothen go by. What have we got to wait for, then? The raft tha't gone adrift *may* do some good—I was willing enough to lend a hand to build it—but it may come to nothen; and are we goin' to keep all of waiting and waiting, when maybe that raft's gone to pieces? What I'm goin' to do is to build a sort of outrigging machine as'll not capsize, and light enough for a man to shove along. If nobody'll come in it, I'll go alone. If I'm picked up

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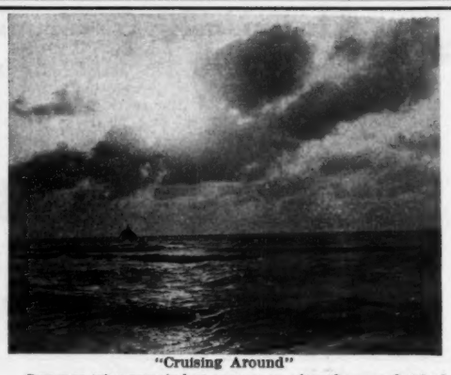

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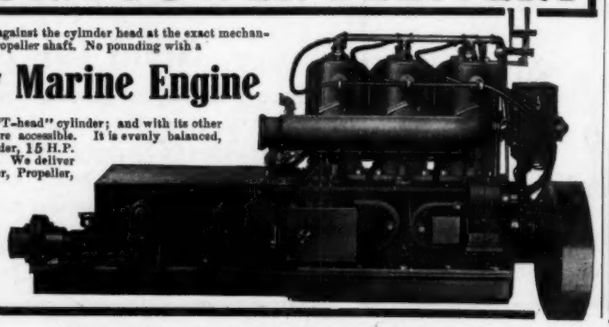

Note the Doman aluminum cover on reverse gear, "T-head" cylinder; and with its other features is up to date in every particular. All parts are accessible. It is evenly balanced, easy to understand. Engine here illustrated is 3-cylinder, 15 H.P. Medium Duty. Other sizes from 5 H.P. to 75 H.P. We deliver each engine complete with Magneto, Force Feed Oiler, Propeller, Shaft, etc.

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good; the vessel as picks me up'll come for the others; and if I'm washed overboard and drowned, well, I'd as lief rot in the sea as rot here."

"Let him do it," cried Norie, eagerly, looking at me. "It's a chance, at all events."

"Hunter is his own master," I replied. "He knows the risks, and that the odds against him are ninenty-nine in the hundred."

"Damn the odds!" shouted the man, angrily. "What are the odds here? They're *all* agin us. You know that, Mr. Walton." Turning to Tripshore, he said, "Will you give me a hand to build the thing I want?"

"Aye," said the other, "I'll give you a hand, Tom; but it'll be helping you to build your coffin, my lad."

"Well, when you're ready, come," exclaimed Hunter. "There's a spell o' daylight left yet."

So saying, he walked hastily toward the wreckage, from which he had already selected a portion of the material he required. When he was out of hearing, Miss Tuke said:

"Why are you opposed to his scheme, Mr. Walton?"

"I am not opposed to it; I am indifferent," I answered. "I should favor it if the chance of the man losing his life was not, as I believe it is, equal to a dead certainty."

"But he may sight a ship, and be the means of sending help to us," exclaimed Norie.

"Yes, he may—he may—and he mayn't!" I replied, bitterly. "If there's any good in a raft at all, then the raft we sent away this morning should answer our end. If the thing is seen, the dead messenger aboard will not appeal less forcibly than a living man. If it is not seen, there is no life to be lost, no long hours of torment to be endured."

"But something must be done—some effort must be made," said Norie, in a low voice.

"My God!" I cried, "have we been idle? What more could we have done? Tell me what to do; give me an idea. If practicable, it shall be executed to the letter. But don't force us to throw away our lives in a senseless effort to preserve them."

For here let me repeat that the idea of the eight, or, if Hunter would not stay, the seven, of us committing ourselves to the sea in such a raft as we should be able to construct, was intolerable to me. Of all marine fabrics the raft has been the theater of the worst sufferings. At the very best it is but a clumsy platform, at the mercy of the winds and surges. A very light sea will set it awash, so that you may reckon upon sitting up to your hips in water nearly all the time you are aboard. It needed no very vigorous imagination to conceive what our situation would be in a seaway, the water pouring in coils over the level stage that would swing to the surges like an ill-balanced kite, our clothes soaked to the skin, our provisions washed away or spoiled. It was not to be expected that Norie and the women could realize all that was meant by the proposal to leave the island on a raft; but to me it offered itself as a dreadful alternative, and though life was as dear to me as it was to the others, I felt that it would be a wiser resolve to stick to the island than risk all those dreadful sufferings, that protracted anguish, and that final extinction, which make some of the naval records the ghastliest and most terrible literature in the world.

(To be Continued.)

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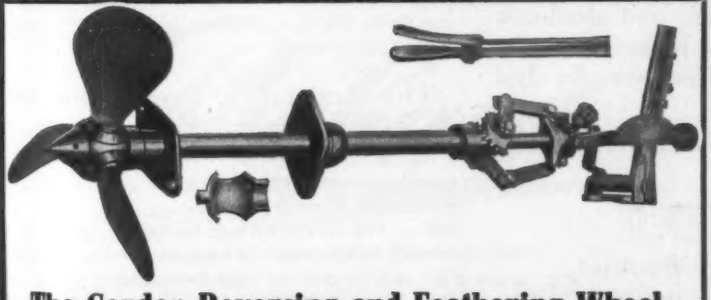

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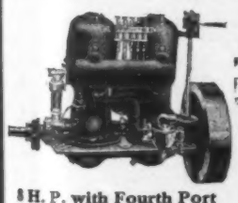

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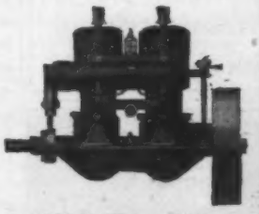

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Cruising in an Open Boat

(Continued from page 37)

tributed inside. The boat propelled by two pairs of oars can be driven at 3 miles an hour, or even 4 at a pinch, and the oars, balancing nicely, the work is not particularly arduous; so that where the boat is used for day-sailing or cruising, where no specific distance has to be covered, the necessity of a motor auxiliary is not keenly felt. A number of these boats have 3-horsepower engines installed, which will drive them about 5 knots; and, with a little additional power they can be driven up to 7 knots, which is about as fast as it pays to drive this model; though, on one occasion, under plain sail, running free, Wyvern averaged 8½ knots for a considerable distance, and at that had a canoe fighting astern which had one man busy keeping from swamping, as it sheered on the following seas, buried its bow and was generally perverse.

I have made most of the alterations, while still keeping an open boat; but in building a slightly larger boat of this model, say 28 to 30 feet over all and 9 feet beam, a very comfortable cabin can be put on, though the headroom will be necessarily limited.

Wyvern can be used without a tender, as she draws only 18 inches aft and somewhat less at the bow with the board up, and can be beached on most shores close enough to get to land dry. The trouble, however, is the great range of the tides which are apt to leave the boat high on the beach. I have adopted a 14-foot Canadian canoe for a dinghy, as it tows very nicely except when running before a high following sea, when it becomes necessary to take it on board and stow it bottom up on the 'thwarts.

In competition with other yachts of the fleet on the percentage handicap and in other classes we have derived considerable enjoyment and some pennants, as with plenty of balloon canvas she can make life quite interesting in anything except very light weather.

The Resistance, Propulsion and Powering of Motor Boats

(Continued from page 39)

speeds of 5 and 6 knots engines of extremely low revolution should be chosen—below 250, if possible. For speeds of 8-12 knots, 300-400 R. P. M. should be chosen. An engine running as high as 800 should not be used in anything except in a boat making 25-30 knots. Revolutions greater than 1,000 should never be used, and only 1,000 R. P. M. in extreme speeds of over 30 knots. Engines of any revolutions, of course, can be used for any speeds, but for the best efficiency of propeller the above statement should be kept in mind. Loss in propeller efficiency means nothing more than a waste of power.

The power of a gas engine depends directly on the revolutions, and if an engine designed to make 20 horsepower at 600 revolutions only makes 500 it is obvious that it is not developing its full power. Every motor boat owner should see to it that his engine is developing its full power. If he finds that it is not turning up the right number of revolutions it is certain his propeller is absorbing too much power—that is, if his engine is in good order. Cutting down the blade width, if it is greater than 0.2 the diameter, or cutting down the diameter slightly will generally bring his engine up to the full number of revolutions.

Fig. 5 shows the distribution of power for a 40-foot motor boat at different speeds. This boat was only driven up to 7 knots and the wave-making resistance was just beginning to be felt. If the two upper curves are continued as straight lines, the upper one will diverge more and more

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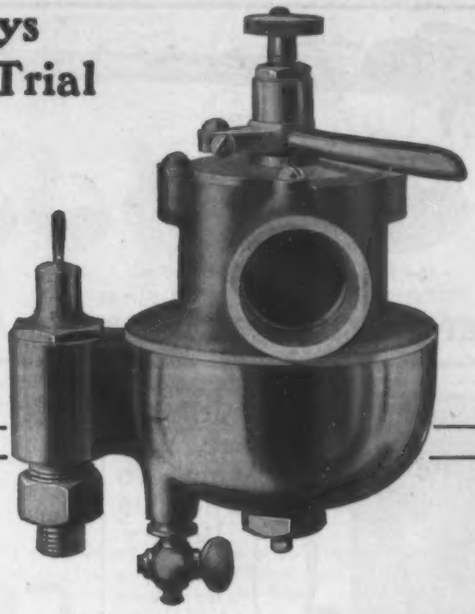

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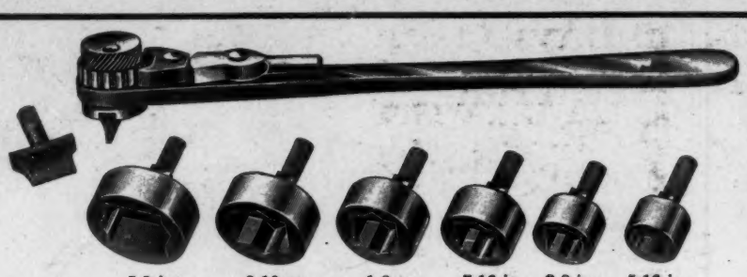

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Set consists of
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which are attracting the enthusiastic approval of Clubs, Associations and Fraternities everywhere. There should be a dealer near you who can show these beautiful trophies. If not, write us at your convenience, and we will send you by return mail a richly illustrated Catalog showing many unique and artistic designs in Loving Cups, Trophies, Desk Sets, etc.

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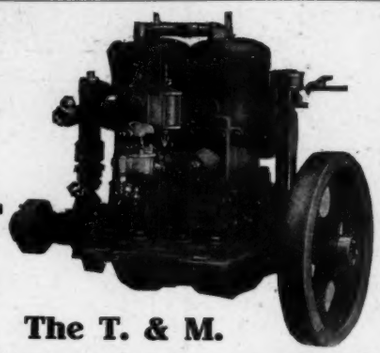

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Easy to Operate and Control

in every emergency—no water too crowded—no landing too difficult for the T. & M. Starts without cranking—is instantly reversible. Picks up speed quickly or can be throttled down to a snail's pace

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are built to withstand more than ordinary usage. Right type and size for every craft up to 65 feet—light, medium and heavy duty—2 to 120 H. P. Single or multiple cylinder—2-cycle, 2-port type.

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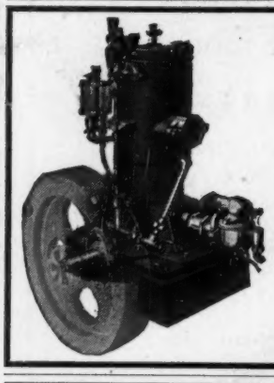

MEN WHO LIVE ON THE WATER
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ROYAL ENGINE

They know which engine gives the most efficient service, that can stand up best against the wear and tear of long runs at sea and does not break down.

Don't you think the choice of these men should help you to decide? Built in sizes from 2½ H. P. to 15 H. P.

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1045 Broad St.
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WHEN YOU WANT A GOOD BOAT

Something that your friends will admire.
Something that will be *safe* and *comfortable* in rough weather, and
Something that can be sold at a fair price, when you are through with her,
Let ME figure on her.
I also have the best of facilities for laying up, outfitting and repair work.

JULIUS PETERSEN, NYACK, N.Y.
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No Motor Boat
is complete without a set of
GENUINE
Armstrong Stock & Dies
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THE ARMSTRONG MFG. CO.
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High Grade Heavy Weight Tanks

For Gasolene, Water and Air of any shape or dimensions desired for any pressure. We make only work of merit.

"Light Competition Work Not Wanted."

Galvanizing of all kinds of marine work.

L. O. KOVEN & BROTHER
50 Cliff Street : : : New York

from the lower one, due to the increasing wave making resistance.

This figure is worthy of careful study, for it shows the distribution of power at all speeds. Thus, at 7 knots about 0.8 H. P. is lost in the engine friction, 2.0 H. P. is lost in the propeller, 2.7 H. P. is used up to overcome the frictional resistance, and about 2.5 H. P. is used in making waves.

A Short Ship on a Long Cruise

(Continued from page 29)

lands of Scarboro loomed on the bow. By this time two vague specks out in the lake had been brought abeam. They were the Meteor and the stone hooker sloop, both having sailed all night and made next to no progress!

There wasn't a ripple on the water all day, and while the Blue Peter clearly demonstrated her ability as a ghoster, she hadn't much to boast of in the way of progress, for from 9 a. m. to 6 p. m. she only went from Oshawa to Frenchman's Bay or some fourteen miles in the nine hours. It promised another night on the lake, so the Old Man kept her away for Frenchman's Bay and gained that harbor by dark.

Here he made a find. A barge was lying at the old elevator loaded with ice, and a tug was due to take her out for Toronto at midnight. When the tug arrived, with an empty ice barge and a crew for the loaded one, the barge captain, who was boss of the works, proved amenable to reason and for the sum of one dollar, paid in lawful money of Canada, agreed to tow the Blue Peter behind his craft into Toronto Bay; so when the city bells, twenty miles to westward, were striking twelve the flotilla of three put forth.

It was broad daylight when Toronto Bay was reached, and getting a light breeze the Blue Peter cast off and sailed on through the harbor and up to her old mooring in Humber Bay, home at last.

The Carburetor—Its Adjustment and Care

(Continued from page 32)

The spraying nozzle or jet is now and then a source of trouble, and a very small particle of grit or other foreign substance will be sufficient to clog up the small orifice. In some instances this obstruction will be forced out when the float chamber is flooded by priming, or the grit may be firmly lodged in the opening, and require the use of a fine wire for its removal. This trouble is sometimes caused by particles of dust floating about in the fuel and drawn into the jet by the suction of the engine. Although not a very common cause of misfiring trouble, these floating particles will sometimes cause the motor to run intermittently. Opening up the auxiliary air valve to admit more air will create a kind of vacuum which will generally suck the obstruction through the jet opening.

The height of the spraying nozzle is an important adjustment, and the boatman should not be too eager to experiment in this direction. If the nozzle is placed too low in the mixing chamber, the fuel level will be raised too much and the carburetor will flood, while if the nozzle is unduly raised the suction will not be sufficient to suck the proper quantity of fuel, although the increased vacuum of high speeds will very likely give the proper quantity. As it is rarely, if ever, necessary to unscrew or alter the position of the spraying nozzle in any way, trouble of this sort is rather remote, but in case the jet has been removed it must be readjusted so that the engine will get the proper amount of fuel at both low and high speeds. This adjustment can only be found by numerous experiments, and the nozzle should not be changed when once it has been adjusted correctly.

COMMERCIAL ACETYLENE

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THE BERMUDA RACE

HAS PROVIDED A BRILLIANT WHITE LIGHT DURING THE ENTIRE TRIP WHENEVER AND WHEREVER IT WAS WANTED, ON THE FOLLOWING BOATS:

[CRUSADER II.	MARCHIONESS	VAGRANT
DERVISH	MARGARET	
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AND WILL DO THE SAME ON YOURS.

We will be glad to supply full information

BOOKLET ON APPLICATION

The Commercial Acetylene Co.

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For Yachting Golf and Tennis

The Thomas Cort Yachting Shoes have a refined style and fitness that is unusual in yachting footwear.

They are strictly *hand-sewed* of fine White Buckskin, over custom lasts. The soles are a cork-and-pure-rubber combination, which makes it utterly *impossible* for these shoes to slip on a wet deck. Nor will they scratch the highest polished surface.

MARTIN & MARTIN

If you once compare the beautiful custom lines—the light weight—the non-slipping quality—of a Thomas Cort with the ordinary yachting shoe, you will always prefer them.

The *THOMAS CORT GOLF SHOE* and *TENNIS SHOE* in White Buckskin are also the world's standard in fashionable style. Of the same hand-sewed and non-slipping qualities so characteristic of our yachting shoe.

Write for Style Brochure and particulars regarding our Shoe-Service-by-Post

MARTIN & MARTIN

Bootmakers for Men & Women

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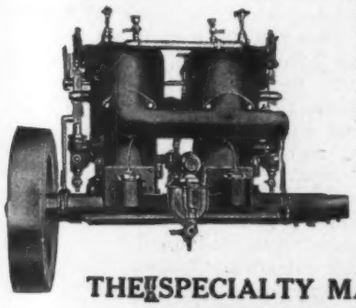
TOQUET SPECIAL MOTOR



The very latest and most carefully designed Marine Motor of the make-and-break, two-cycle type. Each part easy of access. We stand back of every motor and ask you to write us for a catalogue.

Model	Rated H.P.	With Carburetor
SINGLE CYLINDER		
H	2½	$75
J	3½	96
K	5	122
DOUBLE CYLINDER		
R	7	160
S	10	205

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The Latest Comet is a Direct Current Magneto

Weighs but 10 pounds. Size 9″ x 4″ x 5½″.

Starts engine without batteries.

Will furnish ignition for engine and current for 6, 2 c. p. 6 volt lights at same time.

Has absolutely rigid one-piece casing and automatic governor.

Self lubricating bearings renewable in two minutes at cost of a few cents.

It's the best little power plant that you can put on your boat.

Price $12, And your money back if you want it after 30 days' trial.

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WHAT THE MARVEL CARBURETER DOES

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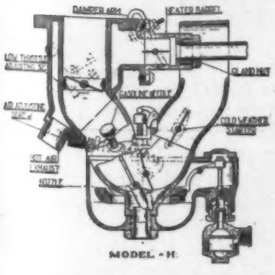

Enables you to throttle down to 100 r. p. m. less than with any other carbureter.

INCREASES your maximum engine speed to 100 r. p. m. more than you can get with any other carbureter.

Starts up your engine quickly on poor gasolene in cold weather and won't freeze up in *any weather*. The automatic control of heat jacket gives you the most heat *when you need it most.*

The *MARVEL* will increase your speed without changing your rating. *Get one and WIN.*

Send for illustrated descriptive matter and our 30-days' trial offer

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WHY use out of date paint?
WHY scrub off the bottom of your boat?
WHY not take advantage of new ideas?
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WHY not buy Bridgeport Bronze Paint and never have to haul or scrub off your boat "in the good old summer time"?

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An advertisement in YACHTING will Sell her

BECAUSE

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Our Sails on the 30-Footers

The boats we fitted out last season were conspicuous winners. This season will see Robinson sails on a great many of the best boats in the country.

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SAVE MONEY The Famous Michigan SAVE MONEY

Speed Propeller Wheels, Reverse Gears and Marine Hardware are used on some of the most up-to-date and fastest boats in the world. Our prices are the lowest; our goods the best; satisfaction guaranteed; immense stock; prompt shipment; save money. Send for our 1911 free catalog today.

MICHIGAN WHEEL CO.

563 Canal Street

Grand Rapids, Michigan, U.S.A.

"On to Washington"

(Continued from page 14.)

made a fine little circle on the chart showing where he thought the anchor and chain was, and the Boss promised to make a cruise down there this summer and find it if it took a week.

Sailing on the Potomac again, I passed the engine on my way to the galley. I was surprised to see a fine display of fireworks shooting out from the fly-wheel. I yelled for a bucket of water, and stood there wondering what was to happen next. Pat brought the water and I dashed it on the fireworks and smoke, but it never touched it. The water added to the effect and made a fine mess all over the cabin. I shut the engine off, and the crazy navigator on deck set up a howl. We didn't know which was the worst, the fire or the tongue lashing from the navigator. I looked out of the companionway and saw why the navigator was cussing us. The Lady Maud was slowly forging ahead directly into a big fish pound, with some fifty poles covered with heavy lines. Fire or no fire we must not get entangled in that spider web. I grabbed the fly-wheel and the engine started the first crack. By reversing we managed to back out of the net, the fireworks were doing business all the time, and the shower of sparks shooting directly at the carburetor. I shut down again and hunted up the trouble. We found a steel lathe tool jammed between the fly-wheel and the base of the engine. Such a little thing! But it might have done considerable damage.

After the dishes were cleared up we sat around in the roof garden enjoying the sun and watching the beautiful shores of the Potomac. The wind shields protected us from the N. W. wind when it came down the river, cutting its usual force the good ship bucked the ebb tide; the crew loafed around in the roof garden, and our engine ran sweetly below.

Wednesday opened cold and clear, and it was 7 o'clock before we stirred. I jumped for the engine and was about to start it when the Boss asked me to fix the air pump to the whistle tank. I did the job and took the knock out of one of the brasses. Dick and Pat were to get breakfast, but it was up to me after all, and I was mad and hungry after my work. To make it worse some body kicked the gas supply pipe to the carburetor off and broke the joint, so I had to fix that also, and not until 9 o'clock did we get away from Alexandria, eating breakfast on the way to Washington, and we reached our destination at 9:25 A. M.

We made fast to the Capitol Yacht Club wharf and packed our grips for home. But before leaving I took my hat off to my dear old ship and patted her side as I bade her good-bye.

The American Defenders

(Continued from page 19.)

each, the builders having contracted that the boat shall obtain a certain speed. The other boat is a semi-displacement boat, 32 feet over all by 5 feet 6 inches beam, being built and powered by the Emerson Engine Company, of Alexandria, Va.

The Electric Launch Company is also designing and building for Albert E. Smith a 40-foot boat with approximately 600 horsepower, consisting of two 300-horsepower especially designed motors. This boat will also be a hydroplane.

Commodore Melville and August Hecksher will also have a hydroplane in the races, as one has been built for them by the Atkin-Wheeler Company. She will be called Nameless II. This boat is 26 feet over all by 5 feet 6 inches beam with 200-horsepower engines. This is the first boat to be on the water, and we reproduce a photograph of her herewith, which shows that she is "some speedy." The boat and engine has a displacement of 1,790 pounds.